

The Honeywell logo is displayed in white, bold, sans-serif font against a solid red background at the top of the page.

Honeywell

A dark blue world map with glowing yellow city lights is visible in the background, primarily showing the Americas.

CONTROL PRODUCTS **TRADELINE**® CATALOG

- Home Comfort Products
- Residential Combustion Products
- Water Control Products
- Indoor Air Quality Products
- Building Solutions
- Commercial Components
- Pneumatic Control Products
- Flame Safeguard Products

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Honeywell Environmental and Combustion Controls Maintains ISO Registration

What is ISO?

ISO is the International Organization for Standardization - originally the quality assurance system standard for Europe. The ISO 9000 Series of Quality System Standards were approved for use in 1987 and were updated in 1994; and again in 2000. They were quickly endorsed by many European businesses. Today most industrialized countries (more than 100) have adopted these standards for accessing quality systems. Because ISO 9000 can apply to any business, it promotes a common standard for accessing systems worldwide.

What does ISO 9000 registration involve?

Registration is evidence that a Quality Management System has been put in place to verify that customer requirements are being identified and met. This means that an Organization has demonstrated the capability to define, document, and control the processes that define the product or service being supplied. Continuous improvement is assured through the preventive and corrective actions that result from a comprehensive system of Internal Audits and Agency (3rd party) Audits.

Registration focuses on the concept of companies using a process approach to quality management. ISO requires that companies meet some very specific requirements, which include defining the process used and controls for each level of every process, from design, through delivery of the finished product or service. Systems, procedures and documentation are required for all processes.

Each facility must be registered separately since it is the quality management system of each facility that is registered, not the products that are manufactured by the system.

Characteristics of ISO certified businesses

ISO Management system standards provide the organization with a model to follow in setting up and operating the management system. This model incorporates the features on which experts in the field have reached a consensus as representing the international state of the art. A management system, which follows the model - or "conforms to the standard" - is built on a firm foundation of state-of-the-art practices. It is a well-organized operation with trained and motivated people. It continually rethinks how it runs its business and focuses on meeting and exceeding customer specifications through eliminating non-value-added functions.

It welcomes outside auditors who review its processes and ensure continual improvement against a universally recognized standard of performance.

What does Honeywell ISO registration offer you?

It offers the confidence and peace of mind that the Honeywell quality system requires production processes that meet highest standards for consistency and control, which translates to consistent product quality.

Many of the products described in this catalog are built in ISO registered facilities, as listed below:

Honeywell ISO Registered Facilities

The following facilities are registered under ISO 9001:2000 registered by Quality Management Institute a division of CSA

Golden Valley Facility
1985 Douglas Drive North
Golden Valley, MN 55422
Certificate # CC1816-014498

ACS ECC – CMO facility
Parque Industrial Las Americas
32320 Chihuahua City
Chihuahua, Mexico
Certificate # CC1816-014501

ACS ECC - West Cost Operations
2055 Dublin Drive
San Diego, CA 92154-8203
Certificate # CC1816-014499

ACS ECC - MexHon S.A. de C.V.
Blvd. Insurgentes No. 8503-2
Tijuana, Baja California
Mexico
Certificate # CC1816-014504

The following off-site locations are included under this registration for the functions as identified in the scope of registration

ACS C-NW Honeywell International
1500 W. Dundee Road
Arlington Heights, IL 60004

Order Specification Number System

TYPE LETTER	TYPE NUMBER	SUFFIX LETTER	OS NUMBER
V	4055	A	1007
The type letter is the single letter, or two letter group, which begins the model number. This letter usually indicates the general type of device involved, however, some product model numbers may not follow these designations exactly. If you have questions about a particular product designation, please contact your Honeywell sales representative. A list of type letters used is shown below (some may fit in more than one category):			
A	— Testers.	L, LA or LS	— Limit controllers.
AT	— Transformers.	M	— Motors.
BC	— Microcomputer burner control system.	P	— Pressure controllers.
C or CS	— Combustion controls; sensors.	PM	— Program modules.
D or DM	— Dampers.	Q	— Accessories.
DSP	— Demonstrators.	QS	— Communication interface modules.
EL	— Lighting controls.	R, RA or RW	— Relays.
ER	— Energy recovery ventilators.	RM	— Primary controls.
F	— Electronic air cleaners.	S	— Switches and ignition modules.
H	— Humidity controls, including combination temperature and humidity controllers.	ST	— Electronic fan timers.
		SV	— Integrated controls.
		T, TA or TS	— Thermostats and remote bulb temperature controllers.
		TG	— Thermostat guards.
		V, VR, VS or VW	— Valves.
		W	— Load control panels, accessories.
		Y	— Package sets.
		ZM	— Software packages.

Summary of Honeywell Control Series Designations

Series Designation	Controller Type	Controller Action	Relay or Valve Type	Motor Action	Example
Series 20	3-wire, low voltage (2-position)	Makes circuit to start; makes second circuit to stop.	—	Low voltage; rotates 180 to open, continues 180 to close; stops on power interruption.	V2045
Series 40	2 wire, line voltage (2-position)	Makes circuit to start; breaks it to stop.	Line voltage coil circuit; makes (opens) when powered; breaks (closes) when power interrupted.	Line voltage; motor drives open when powered; spring returns on power interruption.	T42, L4064, L4008
Series 50	Mechanical (nonelectrical) series.				V5011
Series 60	3-wire, line voltage (2-position)	Makes circuit to start; makes second circuit to stop.	—	Old style—line voltage equivalent to series 20. New style—line or low voltage drives open when powered open; reverses and drives closed when powered closed; stops on power interruption.	M6284
Series 70	Electronic series.				M7285, C7031
Series 80	2-wire, low voltage (2-position)	Makes circuit to start; breaks it to stop.	Low voltage coil circuit; makes (opens) when powered; breaks (closes) when power interrupted.	Low voltage; motor drives open when powered; spring return closed on power interruption.	T87, L8124
Series 90	3-wire, low voltage (modulating)	Varies resistance between common terminal and two end terminals in response to controlled variable.	—	Low voltage; motor modulates position in response to changes in controlled variable signaled by controller.	T921, M9164, W899

General Information

Approval Bodies

Most of the devices described in this catalog have been approved or listed by one or more of the approval bodies listed below.

Underwriters Laboratories Inc.

Underwriters Laboratories Inc., is a nonprofit organization that examines and tests devices, systems and materials. Its membership represents a broad cross section of industry, education, and government.

Field inspectors for Underwriters Laboratories Inc., do not normally inspect equipment installed on job sites, but restrict their activities entirely to periodic inspections of products coming off manufacturers' assembly lines.

The three general categories of acceptance of a product by Underwriters Laboratories Inc., are:

1. General listing.
2. Component recognized.
3. Classification.

General listed devices are structurally and functionally complete and suitable for field installation.

Component recognized devices are incomplete in some way that makes them unsuitable for general field installation. They are intended to be factory installed as part of some other piece of equipment. Classified devices or products have been evaluated as to specific hazards only.

Canadian Standards Association

The Canadian Standards Association is a nonprofit, nongovernmental organization which provides a national standardizing body for Canada.

The Canadian Standards Association Testing Laboratories, inaugurated in May 1940, is a division of the Canadian Standards Association, and is recognized as a testing and investigating agency by Inspection Authorities and by Fire Marshalls and Fire Commissioners throughout Canada.

The Canadian Standards Association Laboratories test and examine electrical products submitted for approval in compliance with pertinent Canadian Standards Association codes and standards.

The Canadian Standards Association now includes International Approval Services (IAS).

International Approval Services—U.S.

IAS is the testing organization of the American gas industry with laboratories in Cleveland, Ohio and Irvine, Calif. The IAS sponsors the American National Standards Institute Z21 and Z83 Committees on standards for gas-fired equipment.

Any manufacturer of gas appliances or gas appliance accessories may submit their products to the Laboratories and secure certification of their designs upon compliance with the appropriate national standards. Upon such compliance, the manufacturer is granted an Appliance Cer-

tificate or an Accessory Certificate and is permitted to display the trademarked Laboratories' Certification Seal or trademarked Laboratories' Certification Symbol on the appliance or accessory.

International Approval Services—Canada

IAS represents all segments of the Canadian gas industry, has been accredited by the Standards Council of Canada and the Standards Advisory Committee to prepare National Standards in the area of equipment for use with natural gas and propane. IAS has laboratories in Toronto, Canada.

Each standard is intended to be used within the scope of the standard by the manufacturing sector, those applying the equipment or those responsible for its application. It is the responsibility of the user to determine in each case that the standard is suitable for the application.

IAS operates a certification program for gas appliances, equipment, and accessories.

Factory Mutual

Factory Mutual is an association of mutual insurance companies dedicated to loss prevention. Through its research arm, the Factory Mutual Research Corporation, it investigates means of preventing and minimizing fire and other losses. Factory Mutual Laboratories test and approve two broad categories of devices and materials:

1. Those used for the control or prevention of property damage.
2. Those that in themselves would present serious hazards if not properly designed.

Factory Mutual Acceptance refers to a specific installation or arrangement of equipment. Installations using approved devices, if found satisfactory following review of plans and inspection of completed work, are "accepted".

A continuing follow-up program is carried out through periodic plant inspections and reports of performance in actual use.

Industrial Risk Insurers

Industrial Risk Insurers (formerly FIA) is composed of member stock insurance companies, concerned with all phases of fire protection and other perils insured against by its members.

Generally, Industrial Risk Insurers accepts Underwriters Laboratories Inc., listing as evidence of device acceptability, but approves or disapproves each job on its own merits including:

1. Oven, dryer, furnace or boiler construction.
2. Flame safeguard control systems.
3. Fire protection equipment, sprinkler and alarm systems, etc.

Inspectors are located in field offices in major cities.

The home office is in Hartford, Conn., where a laboratory is maintained.

Date Code

A date code is stamped on each device to identify the date of manufacture.

In October 1975, Honeywell adopted the industry standard date code system of a 4-digit code. The first 2 digits indicate the year; the second 2 digits indicate the week of the year. EXAMPLE: 7812—the last week of March 1978.

For devices manufactured before October 1975, the following date code was used. If the letter "R" is added as a third letter, it indicates a repair date.

A January	G July	H 1962	Z 1970
B February	H August	G 1963	Y 1971
C March	I September	F 1964	X 1972
D April	J October	E 1965	W 1973
E May	K November	D 1966	V 1974
F June	L December	C 1967	U 1975
		B 1968	T 1976
		A 1969	

Terms of Payment and Prices

Contact your local Honeywell TRADELINE Wholesaler or Authorized Distributor for your discount and terms of payment.

Taxes

The amount of any and all present or future taxes or other government charges upon the production, shipment, installation or sale of the equipment covered hereby, including use or occupation taxes, shall be added to the price and paid by the Purchaser; or in lieu thereof, the Purchaser shall furnish the Company with a tax-exemption certificate acceptable to the taxing authorities.

International Controls

Some Honeywell controls are available with Celsius scales and/or at 110/220V, 50 Hz. For information on the availability of these devices, contact:

Burner and Boiler Controls and Systems
Honeywell International Inc., MN10-2497
1985 Douglas Drive North
Golden Valley, MN 55422-3992

All other controls and systems:
International Marketing MN10-2523
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422-3992

Horsepower Ratings

Ratings of Honeywell controls listed herein are in amperes, and correspond generally to the values for various horsepower as shown in this chart. Full load ratings are taken from the National Electrical Code, 1978 edition; locked motor ratings are 6 times full load rating (ac) or 10 times full load rating (dc).

All motors do not necessarily come within the maximum ampere ratings shown in the table, and control devices must be used which have a rating equal to, or greater than, the actual motor running and starting currents.

Approximate Horsepower	120V		240V	
	Full Load	Locked Rotor	Full Load	Locked Rotor
1/6 ac dc	4.4 —	26.4 —	2.2 —	13.2 —
1/4 ac dc	5.8 3.1	34.8 31.0	2.9 1.6	17.4 16.0
1/3 ac dc	7.2 4.1	43.2 41.0	3.6 2.0	21.6 20.0
1/2 ac dc	9.8 5.4	58.8 54.0	4.9 2.7	29.4 27.0
3/4 ac dc	13.8 7.6	82.8 76.0	6.9 3.8	41.4 38.0
1 ac dc	16.0 9.5	96.0 95.0	8.0 4.7	48.0 47.0
1-1/2 ac dc	20.0 13.2	120.0 132.0	10.0 6.6	60.0 66.0
2 ac dc	24.0 17.0	144.0 170.0	12.0 8.5	72.0 85.0
3 ac dc	34.0 25.0	204.0 250.0	17.0 12.2	102.0 122.0

Reference Information

NEMA Standard Classification Code for Flame Safeguard Enclosures

NEMA 1—General purpose. for indoor protection, where conditions are not unusually severe.

NEMA 2—Driptight. Designed to exclude falling moisture or dirt. Particularly applicable to cooling rooms, laundries, etc., where condensation is prevalent. For indoor use.

NEMA 3—Weather Resistant (weatherproof). For outdoor use; designed to withstand all normal exposure to natural elements. Controls mounted on pullout racks for easy access. With rain hood and weather seals.

NEMA 4—Watertight. Withstands water pressure from 1 in. hose nozzle, 65 gallons per minute, from distance of not less than 10 ft for five minutes. Suitable for maritime applications, breweries, etc.

NEMA 5—Dust-tight. Equipped with dust-tight gaskets. Suitable for mills and other high-dust atmospheres.

NEMA 6—Submersible. For submerged operation under specified pressures and time.

NEMA 7—Hazardous Locations, National Electrical Code Class 1 (circuit breaks in air).

NEMA 8—Hazardous Locations, National Electrical Code Class 1 (circuit breaks immersed in oil).

NEMA 9—Hazardous Locations, National Electrical Code Class 2.

NEMA 10—Explosion-proof. Meets U.S. Bureau of Mines requirements for explosive atmospheres.

NEMA 11—Acid or Fume Resistant. Provides for immersion of enclosed equipment in oil.

NEMA 12—Industrial Use. Excludes oils, dust, moisture, to satisfy individual requirements.

Conversion of Pressure Units

(Convert by multiplying value in known pressure units by factor listed under required pressure unit.)

Known Pressure Unit	Required Pressure Unit								
	Kilo-pascals	Pounds per sq in.	Ounces per sq in.	Millimeters of Mercury	Kilograms per sq cm	Inches of Water	Inches of Mercury	Feet of Water	Centimeters of Water
Centimeters of Water	0.0981	0.0142	0.227	0.735	0.000999	0.394	0.0289	0.0328	—
Feet of Water	2.99	0.433	6.94	22.4	0.0305	12.0	0.883	—	30.5
Inches of Mercury	3.39	0.491	7.86	25.4	0.0345	13.6	—	1.13	34.6
Inches of Water	0.249	0.0361	0.578	1.87	0.00254	—	0.0735	0.0833	2.54
Kilograms per sq cm	98.1	14.2	228.0	735.0	—	394.0	29.0	32.8	1000.0
Millimeters of Mercury	0.133	0.0193	0.308	—	0.00136	0.535	0.0394	0.0446	1.36
Ounces per sq in.	0.431	0.0625	—	8.24	0.00439	1.73	0.128	0.144	4.40
Pounds per sq in.	6.89	—	16.0	51.7	0.0703	27.7	2.04	2.31	70.4
Kilopascals	—	0.145	2.32	7.52	0.010	4.02	0.295	0.334	10.2

Absolute Pressure = Gauge Pressure +14.74 psi.

Capacities

Most gas capacities listed in this catalog are stated for natural gas, based on 1,000 Btu per cu ft, 0.64 sp. gr. nat. gas, at a pressure drop of 1.0 in. w.c. (37.3 MJ/m³, 0.64 sp. gr. at a pressure drop of 0.25 kPa).

To calculate the Btu/h capacity for other gases, multiply the listed Btu/h capacity by the conversion factor.

Total Heating Value for Gas X		At sp. gr.	Conversion Factor (multiply)
Btu/cu ft	MJ/m ³		
500 to 800	18.7 to 29.8	0.60	0.516 ^a
800 to 950	29.8 to 35.4	0.70	0.765 ^a
2500	93.3	1.53 (LP gas)	1.62

^a Nominal conversion factor for range of total heat value.

For gases not listed in table, use one of the following formulas:

$$\left(\frac{\text{Listed Btu/h Capacity}}{(0.64 \text{ sp. gr.})} \right) \left(\sqrt{\frac{0.64}{\text{sp. gr. gas X}}} \right) \left(\frac{\text{Btu/cu ft (MJ/m}^3\text{ gas X)}}{1000 \text{ Btu/cu ft (37.3 MJ/m}^3\text{)}} \right) = \text{Btu/h Capacity gas X}$$

or

$$\left(\frac{\text{Btu/h Capacity}}{(\text{gas A})} \right) \left(\sqrt{\frac{\text{sp. gr. gas A}}{\text{sp. gr. gas B}}} \right) \left(\frac{\text{Btu/cu ft (MJ/m}^3\text{ gas B)}}{\text{Btu/cu ft (MJ/m}^3\text{ gas A)}} \right) = \text{Btu/h Capacity gas B}$$

M18317

Power & Heat

1 Btu	776 ft-lb 0.293 Watt-hr 252 cal
1 cal	0.003968 Btu 0.0011619 Watt-hr
1 Btu/h	0.293 Watt 4.2 cal/min
1 Watt	3.413 Btu/h
1 Watt-hr	3.413 Btu
1 kW (1000 Watts)	3413 Btu/h
1 kW-hr	3413 Btu
1 hp	0.746 kW 2544.65 Btu/h 33,000 ft-lb./min
1 Bohp ^a	9.809 kW 33,479 Btu/h 34.5 lb of steam per hour

^a Boiler Output Horsepower is the equivalent of the heat required to evaporate 34.5 lb of water per hour into dry, saturated steam at 212 F.

Btu Contents of Fuels

Grade or Type	Unit	Btu
No. 1 Oil	Gallon	137,400
No. 2 Oil	Gallon	139,600
No. 3 Oil	Gallon	141,800
No. 4 Oil	Gallon	145,100
No. 5 Oil	Gallon	148,800
No. 6 Oil	Gallon	152,400
Nat. Gas	cu ft	950 to 1,150
Propane	cu ft	2,550
Butane	cu ft	3,200

Flame Safeguard Conversion Factors

Simplified method of determining combustion air required to completely burn a given amount of fuel.

$$\text{Cf/h Air} = \frac{\text{Btu/hr input}}{100}$$

M18318

Normally useful for determining standard cubic feet of fuel consumed when metering pressure is other than standard; e.g., gas passing through a volumetric gas meter at 5 psig. (The heating value of fuel gases is based on Btu/cf at standard gas conditions.)

To correct gas volume from one set of conditions to another.

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

- P = Absolute pressure.
 = 14.7 + gauge psi.
 T = Absolute temperature in -R = 460.
 V = Volume in any consistent terms.

Turndown ratio of fixed area burner.

$$\text{T.D.} = \sqrt{\frac{\text{Maximum Pressure Drop across Burner}}{\text{Minimum Pressure Drop across Burner}}} = \frac{\text{Maximum Firing Rate}}{\text{Minimum Firing Rate}}$$

M18319

Where pressure drops are expressed in the same units.

Relationship between flow capacity at a specified pressure drop and Cv factor.

Cv = Flow Factor. Defined as the amount of water at 60 F in gallons per minute which will flow through a valve in the open position with a pressure drop through the valve of 1 pound per square inch.

For capacity conversion to gases the following may be used for pressure ratios less than critical ratios.

$$Q = 1360 \text{ Cv} \sqrt{\frac{(P_1 - P_2) P_2}{GT}}$$

Q = Standard cubic feet per hour at 14.7 psia and 60 F.

P1 = Inlet pressure, psia.

P2 = Outlet pressure, psia.

T = Absolute temperature in -R = -F+460.

G = Specific gravity of the gas.

Authorized Distributors

Honeywell Authorized Distributors

Certain Honeywell product lines are available only through Authorized Distributors. Authorized distributors have chosen to make a commitment to representing Honeywell controls. They are committed to excellence:

- in education, by providing continuing training in HVAC industry developments to their employees.
- in application, by choosing the right system for each application.
- in marketing, by providing customers with accurate information and efficient service.

Commercial Air Quality Distributors

For commercial electronic air cleaner and energy recovery ventilation applications.

Perfect Climate Distributors

For residential electronic air cleaner, air filter, humidification and Perfect Window™ Fresh Air Ventilation applications.

Environmental Controls Distributors

For commercial environmental controls and systems.

Enviracaire® Elite Distributors

For residential electronic air cleaner, air filter, humidification, Perfect Window™ Fresh Air Ventilation applications, and speciality listed Enviracaire Elite products.

Authorized Systems Distributors

For Building Direct Digital Control (DDC) building management systems, as well as commercial environmental controls and systems.

Authorized Commercial Wholesalers

For commercial hydronic controls and commercial replacement products.

Flame Safeguard Distributors

For commercial and industrial burner and boiler controls and systems.

7800 SERIES Distributors

For commercial and industrial burner and boiler controls and systems, and 7800 SERIES burner controls.

ControlLinks™ Representatives

For ControlLinks Products.

Pneumatic Controls Distributors

For pneumatic products such as controls, valves, actuators, relays, and switches.

Electronic Air Cleaners Authorized Repair Stations

Repair stations have the equipment and trained technicians to provide fast, efficient service of electronic air cleaners and energy recovery ventilators. They are located in many major cities for your customers' convenience.

Honeywell Water Control Representatives.

Honeywell Braukmann products for control and management of water in the plumbing, hydronic heating and filtration industries are available through independent manufacturers' representatives.

FOR YOUR CONVENIENCE

For more information about Authorized Distributors, Repair Stations or Manufacturers' Representatives, or for the name of a particular outlet in your area, use our toll-free number.

1-800-345-6770, ext. 2040

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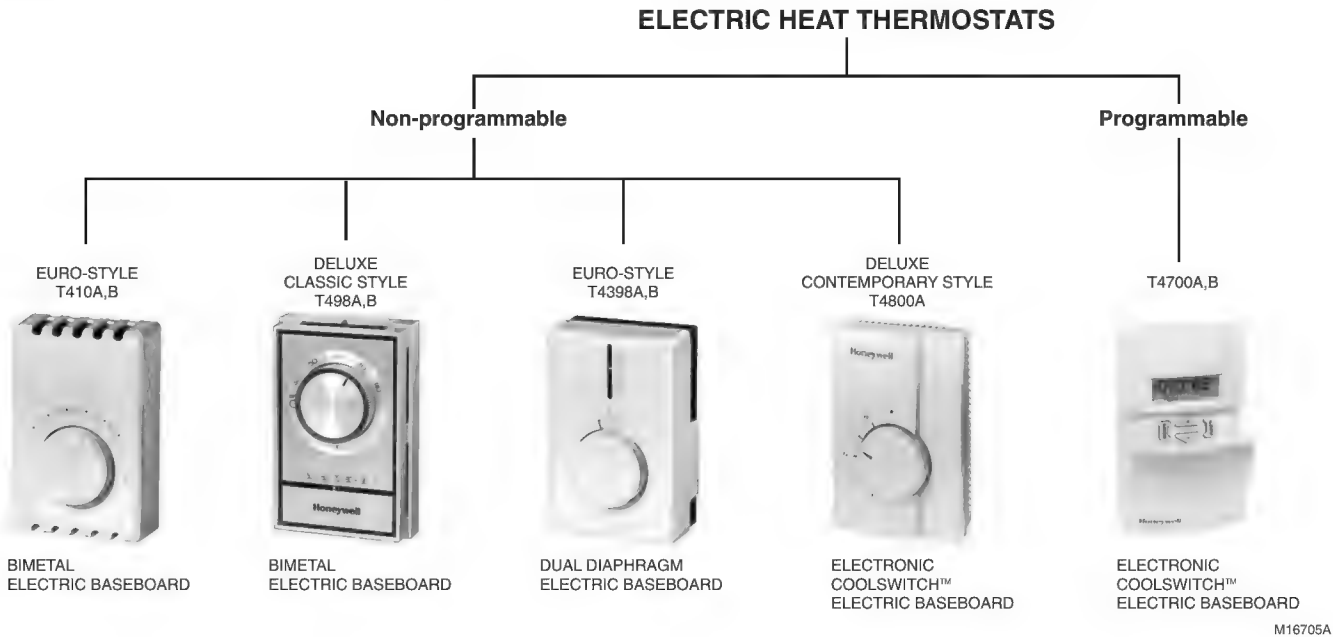
Thermostat Selection Guide

The following Thermostat Selection Guides have been provided to help you quickly determine the most appropriate thermostat for your particular application.

Electric Heat Thermostats

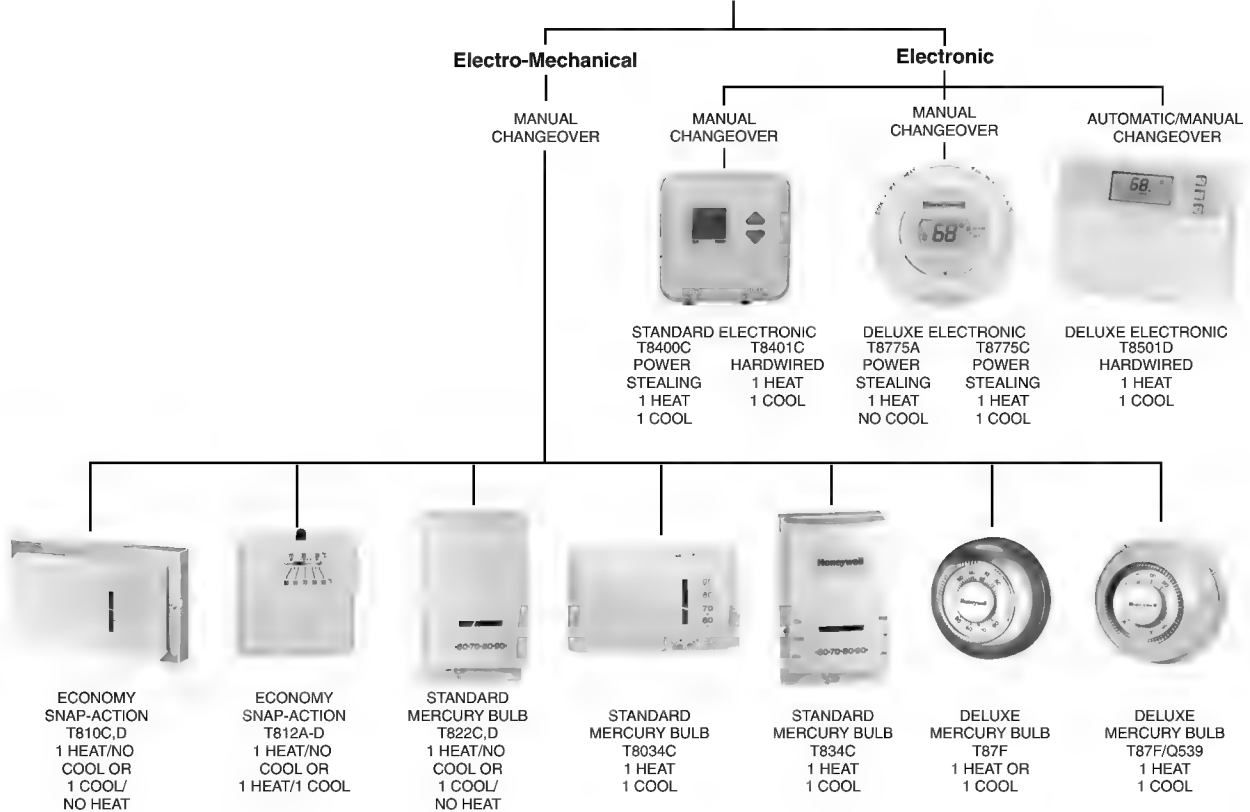
Honeywell electric heating thermostats provide comfort and energy savings in electric resistance baseboard heating applications. With Honeywell's advances in electric heat control technology, your customers can enjoy more precise temperature control and reliability. Whether

your customer wants economical long-lasting control, super-sensitive high performance, or attractive styling with rugged construction—there's a Honeywell electric heat thermostat that's right for the application.



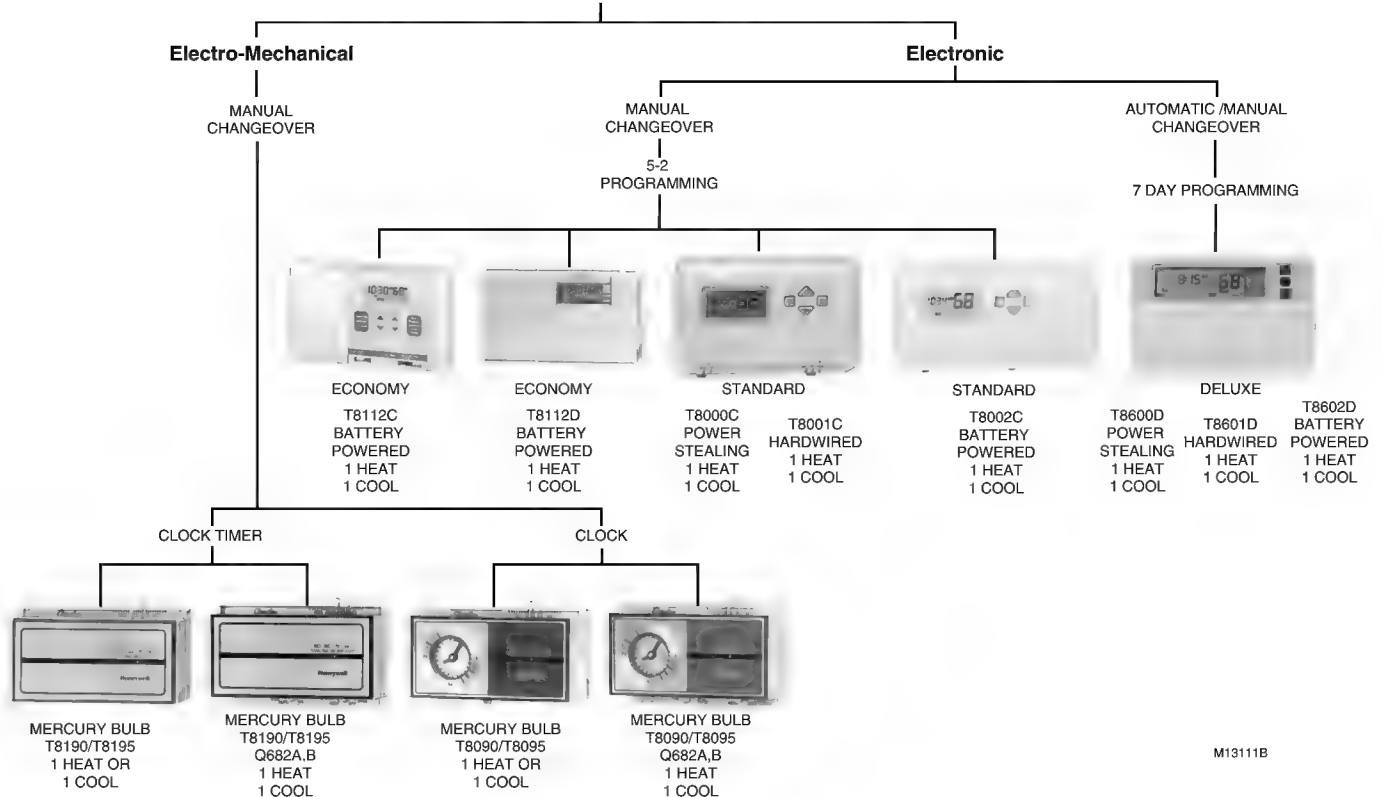
Single Stage Residential Thermostats

RESIDENTIAL SINGLE STAGE NON-PROGRAMMABLE



M13112B

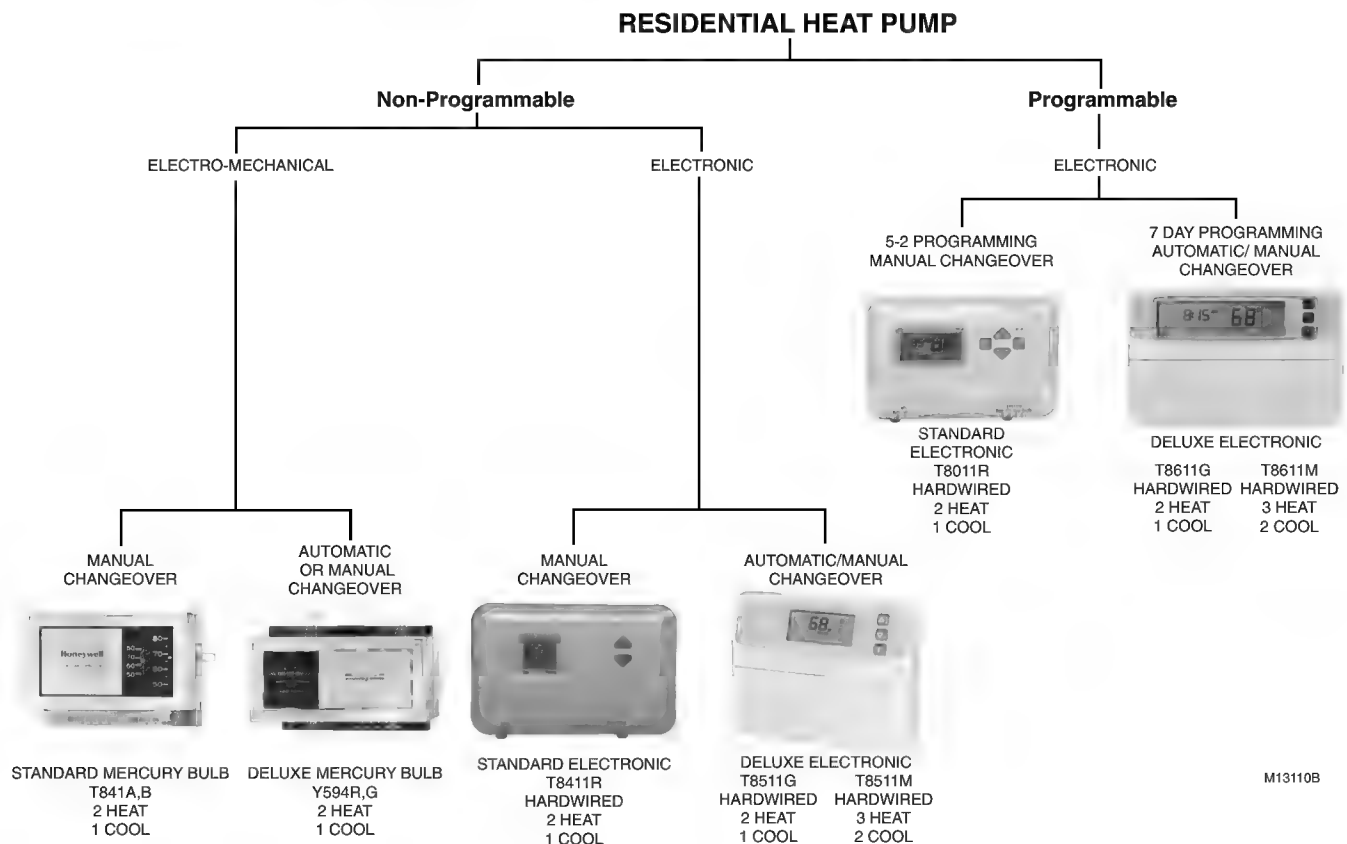
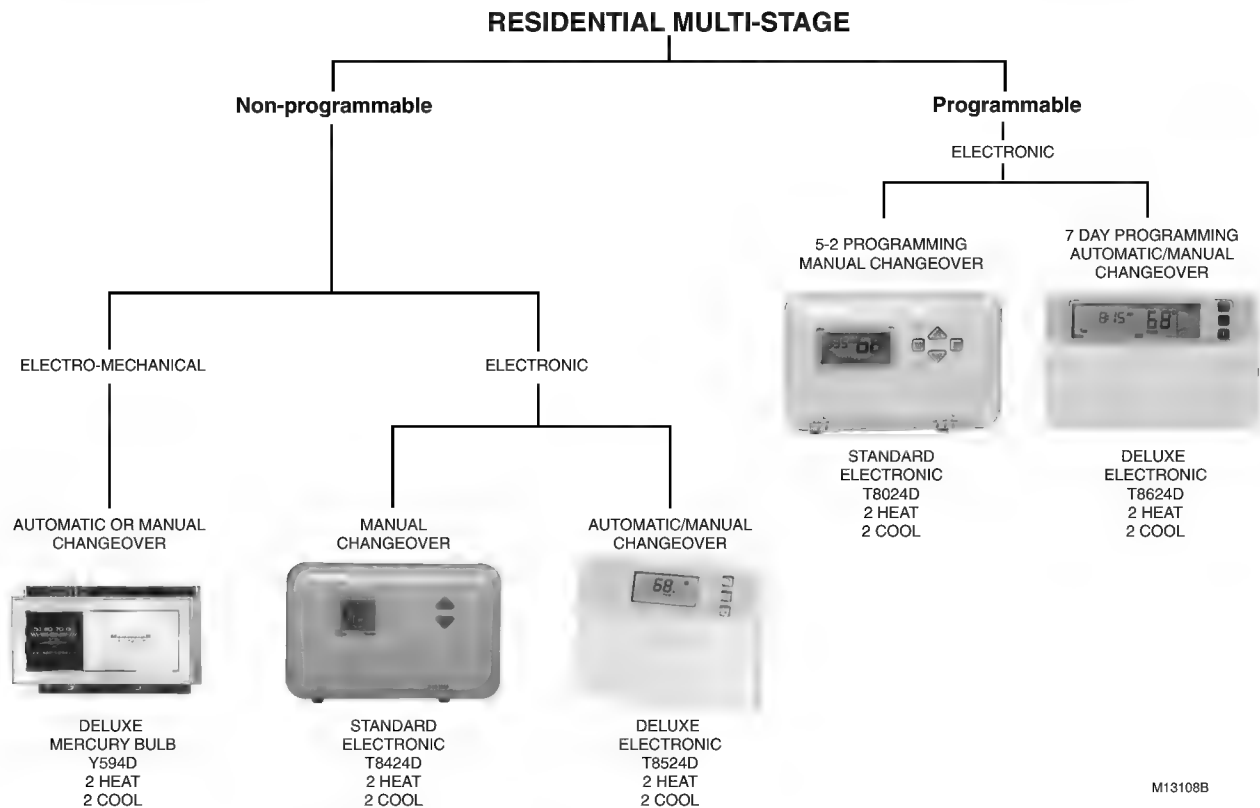
RESIDENTIAL SINGLE STAGE PROGRAMMABLE



M13111B

Thermostat—Selection Guide

Multi-stage and Heat Pump Residential Thermostats



Non-Programmable Thermostats—Mechanical

T410 Electric Heat Thermostats



Application: Electric Baseboard Heat

Dimensions, Approximate: 4 1/2 in. high, 2 3/4 in. wide, 2 1/4 in. deep
(115 mm high, 70 mm wide, 57 mm deep)

Setting Temperature Range: 40 F to 80 F (5 C to 27 C)

Operating Temperature Range: 40 F to 80 F (5 C to 27 C)

Differential Temperature: 3 F (2 C)

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Economy thermostats that provide reliable line voltage control of resistive rated electric heating equipment. Snap-action switch makes heating circuit on temperature fall.

- Economical.
- Replace virtually any two-wire (T410A) or four-wire (T410B) line voltage wall-mounted electric heating thermostat.
- Easy to install; 6 in. (150 mm) color-coded leads.
- Include long-lasting Micro Switch™ mechanism.
- Rugged, plastic mounting base and one-piece cover with vents.
- Ideally suited to new construction applications.

Electrical Ratings: Noninductive Resistive 22A at 120/208/240 Vac.
19A at 277 Vac.

Approvals:

Underwriters Laboratories, Inc: Listed; File No. E47434, Guide No. XAPX

Canadian Standards Association: Listed; File No. LR1322

Accessories:

272804A Range stop and locking screw assembly

Product Number	Color	Scale Range		Sensor Element	Switching Action	Includes
		(F)	(C)			
T410A1013	Premier White®	40 F to 80 F	—	Bimetal	SPST	—
T410B1004	Beige	40 F to 80 F	—	Bimetal	DPST	Positive OFF

* TRADELINE models • SUPER TRADELINE models

T498 Electric Heat Thermostats



Application: Electric Baseboard Heat

Dimensions, Approximate: 4 9/16 in. high, 2 7/8 in. wide, 1 15/16 in. deep
(116 mm high, 73 mm wide, 33 mm deep)

Setting Temperature Range: 40 F to 80 F (5 C to 27 C)

Operating Temperature Range: 40 F to 80 F (5 C to 27 C)

Differential Temperature: 3 F (2 C)

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Provide line voltage control of electric heating systems.

- Easy to install; color-coded leads.
- Include thermometer.
- Include long-lasting Micro Switch™ mechanism; makes on temperature fall.
- Rugged, plastic mounting base.
- Mount on standard 2 x 4 in. outlet box or 4 x 4 in. junction box.
- Select models include extra knob decal for recalibration, if necessary.

Electrical Ratings: Noninductive Resistive 22A at 120/208/240 Vac.
19A at 277 Vac.

Approvals:

Underwriters Laboratories, Inc: Listed; File No. E47434, Guide No. XAPX

Canadian Standards Association: Listed; File No. LR1322

Accessories:

272804A Range stop and locking screw assembly

272823 Blind locking cover assembly

Product Number	Color	Scale Range		Sensor Element	Switching Action	Includes
		(F)	(C)			
* T498A1778	Brush gold finish	40 F to 80 F	—	Bimetal	SPST	Range stops, locking cover and extra knob decal for recalibration
T498A1810	Brush gold finish	40 F to 80 F	—	Bimetal	SPST	—
* T498B1512	Brush gold finish	40 F to 80 F	—	Bimetal	DPST	Positive Off; Range stops, locking cover and extra knob decal for recalibration
T498B1553	Brush gold finish	40 F to 80 F	—	Bimetal	DPST	Positive OFF

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical

T4398 High Performance Electric Heat Thermostats



Application: Electric Baseboard Heat

Dimensions, Approximate: 4 1/2 in. high, 2 7/8 in. wide, 2 5/8 in. deep
(115 mm high, 73 mm wide, 67 mm deep)

Setting Temperature Range: 50 F to 80 F (10 C to 27 C)

Operating Temperature Range: 50 F to 80 F (10 C to 27 C)

Differential Temperature: 2 F (1 C)

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Provide precise line voltage control of resistive-rated electric heating equipment.

- For control of resistive-rated baseboard electric heaters.
- Extremely sensitive to temperature changes.
- Replace virtually all standard wall-mounted line voltage thermostats.
- Color-coded leads allow easy installation.
- Include long-lasting Micro Switch™ mechanism.
- Rugged, plastic mounting base.
- Cover thermometer indicates room temperature.
- Well suited for upgrades and high-end new construction.
- Mounts directly on vertical 2 x 4 in. outlet box, or on 4 x 4 in. outlet box.

Electrical Ratings: Noninductive Resistive 22A at 120/208/240 Vac.
19A at 277 Vac.

Approvals:

Underwriters Laboratories, Inc: Listed; File No. E47434, Guide No. XAPX

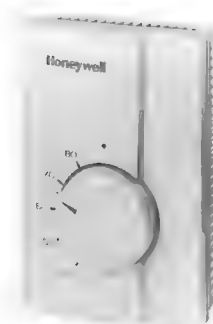
Canadian Standards Association: Listed: File No. LR1322

Accessories:

272804A Range stop and locking screw assembly

	Product Number	Color	Scale Range		Sensor Element	Switching Action	Includes
			(F)	(C)			
*	T4398A1021	Premier White®	50 F to 80 F	—	Vapor filled dual diaphragm	SPST	Thermometer, range stops and locking cover screws
*	T4398B1029	Premier White®	50 F to 80 F	—	Vapor filled dual diaphragm	DPST	Thermometer, range stops, locking cover screws, Positive Off
* TRADELINE models • SUPER TRADELINE models							

T4800 Precision Electronic Electric Heat Thermostats



Application: Electric Baseboard Heat

Dimensions, Approximate: 3 1/8 in. wide, 4 3/4 in. high, 2 5/8 in. deep
(120 mm high, 80 mm wide, 68 mm deep)

Operating Temperature Range: 40 F to 90 F (5 C to 25 C)

Differential Temperature: 1 F (.5 C)

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Electronic non-programmable thermostats that provide accurate control of resistive-rated electric heating equipment.

- Patented CoolSwitch™ technology increases thermostat life.
- Solid state electronic thermistor sensing element.
- Senses temperature changes $\pm 1^\circ$ F.
- Mounts directly on vertical 2 in. x 4 in. outlet box.
- Two-wire design with non-polarized lead wires for easy installation.
- Developed with assistance from the Electrical Power Research Institute (EPRI), representing the electrical power industry of the U.S.

Electrical Ratings: Noninductive resistive 16A at 240 Vac, 2A minimum.

Approvals:

Underwriters Laboratories, Inc: Listed; File No. E47434, Guide No. XAPX

Canadian Standards Association: Listed: File No. LR1322

NEMA Standard: Conforms to NEMA Standard DC3 for scale accuracy

	Product Number	Color	Scale Range		Sensor Element	Switching Action	Includes
			(F)	(C)			
*	T4800A1015	Premier White®	50 F to 80 F	—	Thermistor	SPST	LED indicator, light indicates when heat comes on.
* TRADELINE models • SUPER TRADELINE models							

Programmable Thermostats—Electronic

T4700 Chronotherm™ Electronic Programmable Line Voltage Thermostat



Provides line voltage electronic programmable temperature control of resistance-rated heating systems. Depending on local climate, night and day setback of space temperature can save up to 28% of the energy used to heat a controlled zone. According to the Electric Power Research Institute, precision temperature control also offers up to 12% energy saving during comfort periods compared with conventional bi-metal heating thermostats.

- Patented CoolSwitch™ design offers exceptionally long service life.
- Full 7-day independent programming or selectable 5-1-1 programming; allows different schedules and temperature setpoints to match the homeowner's flexible schedule.
- Easy to Use Programming and Copy feature.
- Digital temperature sensing and control for energy efficient precision operation.

- Liquid Crystal Display.
- Decorated door hides programming keys.
- Temporary and permanent temperature overrides.
- Temperature setpoints (programs) are permanently held in memory (no batteries used) and retained during power outages for increased convenience
- Suitable for electric baseboard and non-inductive-rated fan forced heaters.
- Directly replaces any two-wire (T4700A) or four-wire (T4700B), 240 Vac resistive-rated line voltage electromechanical or electronic thermostat from 500W to 3800W.
- Vertical mounting, single-gang NEMA 2 in. (51 mm) x 3 in. (76 mm) flush mount or 2 in. (51 mm) x 4 in. (102 mm) surface mount electrical box.

Application: Electric Baseboard Heat

Dimensions, Approximate: 3 5/16 in. wide, 5 1/16 in. high, 1 5/8 in. deep (127 mm high, 84 mm wide, 42 mm deep)

Setting Temperature Range: 45 F to 80 F (7 C to 27 C)

Operating Temperature Range: - 20 F to 104 F (-30 C to 40 C)

Differential Temperature: 1 F (.5 C)

Electrical Connections: 6 in. (150 mm) copper leadwires, suitable for connecting to aluminum wiring if approved CO/ALR solderless connectors are used.

Electrical Ratings: 16A (3800W) max, 2A (500W) min at 240 Vac, 60 Hz

Approvals:

Underwriters Laboratories, Inc: Canadian Standards Association: CSA Certified LR 1322, UL Listed. CSA Performance Certification at 16A, 240 Vac.

NEMA Standard: Conforms to NEMA Standard DC3 for scale accuracy

	Product Number	Color	Scale Range		Sensor Element	Switching Action	Includes
			(F)	(C)			
*	T4700A1016	Premier White®	45 F to 80 F	7 C to 27 C	Thermistor	SPST	—
*	T4700B1014	Premier White®	45 F to 80 F	7 C to 27 C	Thermistor	DPST	Positive OFF
* TRADELINE models • SUPER TRADELINE models							

Non-Programmable Thermostats—Electronic

T8400; T8401 Electronic Thermostats; T8411 Electronic Heat Pump Thermostat; T8424 Electronic Multistage Thermostat



Electronic Thermostats provide temperature control for 24V heating-cooling systems, including multistage heat pump systems and multistage conventional systems, with manual changeover from heat to cool.

- Attractive styling complements any decor.
- Ease-of-use means fewer questions and increased satisfaction.
- Large display for quick, easy readability.
- Keys are located by the display for easy access.
- Fan and system switches are located on the lower edge to eliminate accidental setting changes.
- Easy installation, setup and self-test saves installer time.
- Manual changeover from heat to cool eliminates unexpected system operation.
- T8400; T8401 for 1 stage heat, 1 stage cool.
- T8411 for 2 stage heat, 1 stage cool heat pumps.
- T8424 for up to 2 stage heat, 2 stage cool conventional.
- Degree F or C temperature display for added model flexibility.
- Selectable heating cycle rate for a variety of applications.
- Cooling cycle rate is fixed (3 cph), the standard setting for compressors, for speedy installation.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages.

Dimensions, Approximate: Horizontal models: 3 1/2 in. high, 5 1/2 in. wide, 1 3/16 in. deep (89 mm high, 140 mm wide, 55 mm deep); Square models: 3 1/2 in. high, 3 1/2 in. wide, 1 3/16 in. deep (89 mm high, 89 mm wide, 55 mm deep)

Setting Temperature Range: 40 F to 99 F (4.5 C to 37 C)

Operating Temperature Range: 30 F to 110 F (-1 C to +43.3 C)

Interstage Differential Temperature: 1 F to 1.5 F (.5 C to .8 C)

Multistage models only

Electrical Ratings: 18 to 30 Vac

Frequency: 50/60 Hz

Humidity Ratings: 5 to 90% RH, non-condensing

Accuracy: 1 F (0.5 C)

Heating Current: 1st stage 0.02 to 1.5A running; 3.5A inrush

Cooling Current: 1st stage 0.02 to 1.5A running; 7.5A inrush

2nd stage 1.0A Max

Fan Current: 0.02A to 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Cycles per Hour: Adj. 1,3,4,5,6,9,12 depending on model

Accessories:

209632 Cover Plate Mounting Bracket for T8400, T8401 square models

209634A Taupe Decorator Cover Plate, 3 7/8 in. (98 mm) x 3 7/8 in. (98 mm)

209634B Premier White Decorator Cover Plate, 3 7/8 in. (98 mm) x 3 7/8 in. (98 mm)

209635A Taupe Decorator Cover Plate, 5 3/4 in. (146 mm) x 5 3/4 in. (146 mm)

209635B Premier White Decorator Cover Plate, 5 3/4 in. (146 mm) x 5 3/4 in. (146 mm) for use with T8400, T8401, T8411 and T8424 horizontal models

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Switch Type	Stages	Includes
					System	Fan					
*	T8400B1000	Heat only gas or oil systems	Premier White®	Square	OFF-HEAT	AUTO-ON	Power-Stealing	R, W, G	Electronic	1 Heat	4074FAB resistor and logo insert pocket
*	T8400B1018	Heat only gas or oil systems	Premier White®	Square	OFF-HEAT	—	Power-Stealing	R, W	Electronic	1 Heat	4074FAB resistor and logo insert pocket
*	T8400C1008	Single stage gas and oil heating and cooling systems	Taupe	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor and logo insert pocket
•	T8400C1016	Single stage gas and oil heating and cooling systems	Taupe	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor, logo insert pocket and 2 decorator cover plates
*	T8400C1024	Single stage gas and oil heating and cooling systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor and logo insert pocket
*	T8400C1032	Cooling and electric heat systems	Taupe	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor and logo insert pocket

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Electronic

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Switch Type	Stages	Includes
				System	Fan					
• T8400C1040	Single stage gas and oil heating and cooling systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor, logo insert pocket and 2 decorator cover plates
* T8400C1057	Cooling and electric heat systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool	4074FAB resistor and logo insert pocket
• T8400C1099	Single stage gas, oil and electric heating with cooling, including 1 heat/1 cool heat pumps	Premier White®	Horizontal	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, Rc, W, Y, G, O, B	Electronic	1 Heat/1 Cool	4074FAB resistor and logo insert pocket
* T8401C1007	Single stage gas and oil heating and cooling systems	Taupe	Square	OFF-HEAT-COOL	AUTO-ON	Hardwired	R, W, Y, G, C	Relay	1 Heat/1 Cool	Logo insert pocket
* T8401C1015	Single stage gas and oil heating and cooling systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Hardwired	R, W, Y, G, C	Relay	1 Heat/1 Cool	Logo insert pocket
* T8401C1023	Cooling and electric heat systems	Taupe	Square	OFF-HEAT-COOL	AUTO-ON	Hardwired	R, W, Y, G, C	Relay	1 Heat/1 Cool	Logo insert pocket
* T8401C1031	Single stage gas, oil and electric heating with cooling, including 1 heat/1 cool heat pumps	Premier White®	Horizontal	OFF-HEAT-COOL	AUTO-ON	Hardwired	R, W, Y, G, C, O, B	Relay	1 Heat/1 Cool	Logo insert pocket
* T8401C1064	Cooling and electric heat systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Hardwired	R, W, Y, G, C	Relay	1 Heat/1 Cool	Logo insert pocket
* T8411R1002	Heat Pumps	Taupe	Horizontal	OFF-COOL-HEAT-EM. HEAT	AUTO-ON	Hardwired	R, Y, W1, W2, E, G, C, O, B, L	Relay	2 Heat/1 Cool	Logo insert pocket
* T8411R1028	Heat Pumps	Premier White®	Horizontal	OFF-COOL-HEAT-EM. HEAT	AUTO-ON	Hardwired	R, Y, W1, W2, E, G, C, O, B, L	Relay	2 Heat/1 Cool	Logo insert pocket
* T8424D1008	Multistage Conventional Heating and Cooling Systems	Premier White®	Horizontal	OFF-HEAT-COOL	AUTO-ON	Hardwired	R,C,W1, W2,Y,Y2,G, O,B	None	2 Heat/2 Cool	Logo insert pocket
* T8424D1016	Multistage Conventional Heating and Cooling Systems	Taupe	Horizontal	OFF-HEAT-COOL	AUTO-ON	Hardwired	R,C,W1, W2,Y,Y2,G, O,B	None	2 Heat/2 Cool	Logo insert pocket

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Electronic

T8501 Deluxe Electronic Thermostats; T8511 Deluxe Electronic Heat Pump Thermostats; T8524 Deluxe Electronic Multistage Electronic Thermostats



Deluxe Thermostats provide electronic control of 18 to 30 Vac single stage or multistage heating and cooling systems, including heat pump systems.

- Liquid Crystal Display (LCD) is backlit and easy to read.
- Most frequently used keys are located near LCD for quick and easy access to information.
- Models available with outdoor temperature sensor capability. The sensor is more accurate than a thermometer.
- Configurable features allow one model to be used to replace many different models.
- Degree F or C temperature display.
- Automatic or manual changeover.
- Electric or conventional heat fan operation.
- Adjustable heating cycle rate.
- Adjustable range stops.
- Minimum off time for cooling compressors and heat pumps protects and extends the equipment life.
- Easy installation, setup and self-test saves installer setup time.
- Installer selectable LED on T8511 Heat Pump models.
- System test simplifies troubleshooting and saves time by overriding the time delays.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages.

Dimensions, Approximate: 3 3/16 in. high, 5 1/4 in. wide, 1 9/16 in. deep (97 mm high, 133 mm wide, 40 mm deep)

Operating Temperature Range: 40 F to 110 F (4 C to 43 C)

Interstage Differential Temperature: 1 to 1.5 F Multistage models only (.5 to .8 C Multistage models only)

Electrical Ratings: 18 to 30 Vac

Frequency: 50/60 Hz

Changeover: Automatic/Manual Selectable

Humidity Ratings: 5 to 90% RH, non-condensing

Accuracy: 1 F (0.5 C)

Heating Current: 0.02 to 1.5A running, 3.5 A inrush

Cooling Current: 0.02A to 1.5A running, 7.5A inrush

Fan Current: 0.02A to 0.5A running, 2.5A inrush

Mounting: Horizontal

Switch Type: Relay

Sensor Element: Thermistor

Cycles per Hour: Adj. 1,3,6,9 depending on model

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

C7089B1000 C7089 Outdoor Sensor

Product Number	Application	Color	Switch Position		Power Method	Terminal Designations	Stages	LEDs	Setting Temperature Range	
			System	Fan					(F)	(C)
• T8501D1046	Single stage heating and cooling systems	Premier White®	OFF-HEAT-COOL-AUTO	AUTO-ON	Hardwired	R, C, Y, W, G, O, B, OT, OT	1 Heat/1 Cool	—	40 F to 99 F	4 C to 37 C
* T8511G1021	Multistage Heat Pumps	Taupe	OFF-HEAT-COOL-AUTO-EM. HEAT	AUTO-ON	Hardwired	R, C, Y1, W1, W2, E, G, O/B, L, OT, OT	2 Heat/1 Cool	1	40 F to 99 F	4 C to 37 C
* T8511G1047	Multistage Heat Pumps	Premier White®	OFF-HEAT-COOL-AUTO-EM. HEAT	AUTO-ON	Hardwired	R, C, Y1, W1, W2, E, G, O/B, L, OT, OT	2 Heat/1 Cool	1	40 F to 99 F	4 C to 37 C
• T8511M1002	Multistage Heat Pumps	Premier White®	OFF-HEAT-COOL-AUTO-EM. HEAT	AUTO-ON	Hardwired	R, C, Y1, Y2, W3, E, G, O/B, X1, L, OT, OT	3 Heat/2 Cool	2	40 F to 99 F	4 C to 37 C
• T8524D1007	24 volt, Multistage heating/cooling systems	Taupe	OFF-HEAT-COOL-AUTO	AUTO-ON	Hardwired	R, Rc, C, Y1, Y2, W1, W2, G, O, B, OT, OT	2 Heat/2 Cool	—	40 F to 99 F	4 C to 37 C
• T8524D1015	24 volt, Multistage heating/cooling systems	Premier White®	OFF-HEAT-COOL-AUTO	AUTO-ON	Hardwired	R, Rc, C, Y1, Y2, W1, W2, G, O, B, OT, OT	2 Heat/2 Cool	—	40 F to 99 F	4 C to 37 C

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Electronic

T8775A,C The Digital Round™ Non-Programmable Thermostats



Dimensions, Approximate: 3 11/16 in. diameter, 1 7/16 in. deep
(94 mm diameter, 37 mm deep)

Operating Temperature Range: 40 F to 110 F (4.5 C to 43.3 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 18 to 30 Vac

Frequency: 60 Hz

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

Heating Current: .02 to 1.5A running, 3.5 A inrush

Cooling Current: 0.02 to 1.5A running; 6.0A inrush

The T8775A Thermostat provides 24V control of heating only systems. The T8775C Thermostat provides single-stage temperature control for 24V heating-cooling systems with manual changeover from heat to cool.

- Attractive styling complements any decor.
- Large easy-to-read display. The temperature reading is easily seen from a distance.
- Backlit display. On-demand backlighting makes it easy to read the display in a dark room or hallway.
- No batteries required. The temperature setting is held permanently in memory in the event of a power failure.
- Powered through heating-cooling system controls.
- System and Fan switches on the T8775C model.
- Manual changeover from heat to cool on T8775C model.
- Easy installation, set up and 5-minute compressor bypass saves time and increases installer productivity.
- Easily configurable by the use of DIP switches.
- F or C temperature display.
- Selectable heating cycle rates (1, 3, 6, 9 cph) for a variety of applications.
- Cooling cycle rate is fixed at 3 cph. This is the standard compressor setting for quick installations.
- Minimum off-time for compressors in the cooling mode. Protects and extends the life of the equipment.
- Decorative cover plate is available to cover marks on the wall or to mount the T8775 Thermostat onto an electrical box.

Fan Current: .02 to 0.5A run; 2.5A inrush

Mounting: Front wired

Switch Type: Electronic

Sensor Element: Thermistor

Cycles per Hour: Adj. 1,3,6,9

Accessories:

50000066-001 Premier White® Decorative Cover Plate for T8775

Replacement Parts:

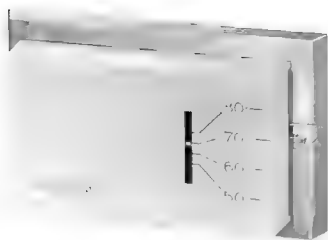
32007680-001 Premier White® Replacement Cover for T8775

	Product Number	Application	Color	Switch Position		Power Method	Terminal Designations	Stages	Setting Temperature Range		Comments	Includes
				System	Fan				(F)	(C)		
*	T8775A1009	24 Vac gas or oil heat only systems	Premier White®	—	—	Powered through heating system controls	R, W	1 Heat	40 F to 90 F in heating	4.5 C to 32 C in heating	Large easy-to-see backlit display.	Wallplate, 4074FAB resistor, mounting screws and wall anchors.
*	T8775C1005	24 Vac gas, oil and electric heating with cooling, including 1 heat/1 cool heat pumps	Premier White®	OFF-HEAT-COOL	AUTO-ON	Powered through heating-cooling system controls	R, Rc, W, Y, G, O, B	1 Heat/1 Cool	40 F to 90 F in heating; 45 F to 99 F in cooling	4.5 C to 32 C in heating; 7 C to 37 C in cooling	Large easy-to-see backlit display.	Wallplate, 4074FAB resistor, mounting screws and wall anchors.

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical

T810; TS810 Heating or Cooling Thermostats



Provide SPST control of 24 Vac residential heating, cooling or millivolt heating systems.

- Coiled bimetal element operates snap-acting switch.
- Temperature setting and thermometer scale on cover.
- Lever on side (horizontal models) or bottom (vertical models) of thermostat for temperature adjustment.
- Mount using two screws through base to wall or outlet box.

Dimensions, Approximate: 2 7/8 in. high, 4 3/4 in. wide, 1 5/16 in. deep (73 mm high, 118 mm wide, 27 mm deep)

Electrical Ratings: 20 to 30 Vac

Frequency: 50/60 Hz

Cooling Current: T810C: 1.5 to 7.5A @25 Vac;

T810D: 0.18 to 0.8A @ 30 Vac;

TS810: 0.1A @ 0.75 Vdc.

Switch Type: Snap action

Switching Action: SPST

Sensor Element: Bimetal

Anticipator (cooling): fixed 24 Vac to 30 Vac

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

193121A Beige Coverplate Assembly includes adapter ring, wall cover plate and screws.

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

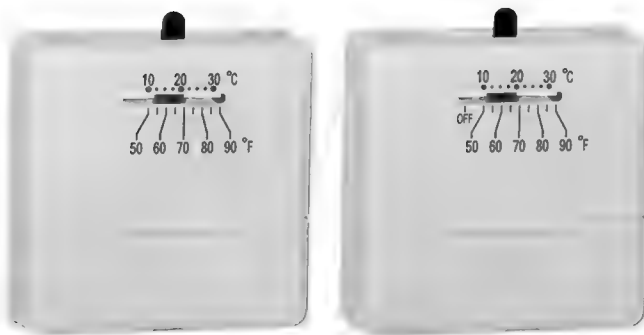
209652A Beige Universal Cover Plate, 7 -7/8 in. (187 mm) x 5-3/4 in. (146 mm).

Product Number	Application	Color	Mounting	Terminal Designations	Stages	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Includes
						(F)	(C)			
T810C1004	Cooling only control in low voltage systems	Beige	Horizontal	two blank screw terminals	1 Cool	50 F to 90 F	—	—	fixed 24 Vac to 30 Vac	—
T810D1003	Heating only control in low voltage systems	Beige	Horizontal	two blank screw terminals	1 Heat	50 F to 80 F	—	0.18A to 0.8A adj.	—	—
T810D1011	Heating only control in low voltage systems	Beige	Horizontal	two blank screw terminals	1 Heat	50 F to 80 F	—	0.32A to 1.2A adj.	—	—
T810D1136	Heating only control in low voltage systems	Beige	Vertical Mounting	two blank screw terminals	1 Heat	50 F to 80 F	—	0.18A to 0.8A adj.	—	Positive OFF
TS810B1007	750 mV	Beige	Vertical Mounting	two blank screw terminals	1 Heat	50 F to 80 F	—	—	—	Positive OFF

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical

T812; TS812 Thermostats



For low voltage control of single-stage heating, cooling or heating-cooling systems.

- NEW STYLE Snap-acting bimetal switch uses no mercury and does not require leveling.
- Thermostat is streamlined and economical.
- Model available for 12 Vdc (T812B) and 750 mV (TS812).
- Includes dealer logo pocket.

Dimensions, Approximate: 3 1/8 in. high, 3 1/8 in. wide, 7/8 in. deep (79 mm high, 79 mm wide, 23 mm deep)

Accuracy: 3 F (1.5)

Mounting: Square

Switch Type: Snap acting

Sensor Element: Bimetal

Color: Premier White®

	Product Number	Application	Switch Position		Terminal Designations	Switching Action	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Stages	Includes
			System	Fan			(F)	(C)				
*	T812A1002	24 volt control of heating only systems	—	—	R, W	SPST	50 F to 90 F	10 C to 32 C	0.18A to 1.2A adj.	—	1 Heat	—
*	T812A1010	24 volt control of heating only systems	HEAT-OFF	—	R, W	SPST	50 F to 90 F	10 C to 32 C	0.18A to 1.2A adj.	—	1 Heat	Positive Off
*	T812B1001	12 Vdc control of heating only systems	HEAT-OFF	—	R, W	SPST	50 F to 90 F	10 C to 32 C	0.18A to 1.2A @ 12Vdc	—	1 Heat	Positive Off
*	T812C1000	24 Vac heating and cooling systems	OFF-HEAT-COOL	AUTO-ON	R, W, Y, G	SPDT	50 F to 90 F	10 C to 32 C	0.18A to 1.2A @ 30Vac	—	1 Heat/1 Cool	—
*	T812D1009	24 volt control of cooling only systems	—	—	R, Y	SPST	50 F to 90 F	10 C to 32 C	—	fixed 24 Vac to 30 Vac	1 Cool	—
*	TS812A1007	Heat Only, 750 mV	HEAT-OFF	—	R, W	SPST	50 F to 90 F	10 C to 32 C	0.1A @ 0.75 Vdc	—	1 Heat	Positive Off
* TRADELINE models • SUPER TRADELINE models												

Non-Programmable Thermostats—Mechanical

T822; TS822 Thermostats



Provide 24 Vac control of heating or cooling systems.

- NEW STYLE LOOK. Vented cover for improved temperature sensing.
- Coiled bimetal element operates mercury switch.
- Setting lever and thermometer scale on thermostat face.
- Straight-in wiring capability.
- Mounts directly on the wall or on vertical outlet box.

Dimensions, Approximate: 4 3/4 in. high, 2 7/8 in. wide, 1 3/8 in. deep (121 mm high, 73 mm wide, 35 mm deep)

Electrical Ratings: 20 to 30 Vac

Mounting: Vertical Mounting

Sensor Element: Bimetal

Switching Action: SPST

Switch Type: Mercury

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

193120B Taupe Mounting Plate Accessory

Product Number	Application	Color	Terminal Designations	Stages	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Comments	Includes
					(F)	(C)				
T822C1108	Cooling only systems.	Taupe	R, Y	1 Cool	55 F to 85 F	13 C to 35 C	—	fixed at 30 Vac Max.	—	Positive OFF
* T822D1024	Heating only control in low voltage systems	Taupe	R, W	1 Heat	55 F to 95 F	13 C to 35 C	0.18 to 1.0A Adj.	—	—	—
* T822D1032	Heating only control in low voltage systems	Taupe	R, W	1 Heat	55 F to 95 F	13 C to 35 C	0.18 to 1.0A Adj.	—	—	Positive OFF
T822D1255	Heating only control in low voltage systems	Taupe	R, W	1 Heat	55 F to 95 F	13 C to 35 C	0.3 to 1.2A Adj.	—	—	—
* T822D1685	Heating only control in low voltage systems	Taupe	R, W	1 Heat	35 F to 65 F	2 C to 18 C	0.18 to 1.0A Adj.	—	—	Range stops
* T822D1693	Heating only control in low voltage systems	Taupe	R, W	1 Heat	45 F to 75 F	7 C to 24 C	0.18 to 1.0A Adj.	—	—	Range stops, high range stop factory set at 68 F (20 C).
* T822D1719	Heating only control in low voltage systems	Taupe	R, W	1 Heat	38 F to 72 F	3 C to 22 C	0.18 to 1.0A Adj.	—	Fixed range stops at 45 F and 72 F; No thermometer; Meets DoD Specifications	—
* T822D2550	Heating only control in low voltage systems	Premier White®	R, W	1 Heat	55 F to 95 F	13 C to 35 C	0.18 to 1.0A Adj.	—	—	—
T822G1005	Heating only, Cooling only or series 20 applications.	Taupe	R, W, Y	—	55 F to 95 F	13 C to 35 C	0.18 to 1.0A Adj.	—	—	—
* TS822A1039	250, 500, or 750 mV	Taupe	R, W, Y	1 Heat	55 F to 95 F	13 C to 35 C	—	—	—	Positive OFF

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical

T827 Heating Thermostat



Provides SPST control in millivoltage, 12 Vdc and 24 Vac heating systems.

- Coiled bimetal element operates snap-acting switch.
- Temperature setting and thermometer scale on cover.
- Temperature setting lever on bottom of thermostat cover scale.
- Mount using two screws through base to wall or outlet box.
- Large numbers on faceplate for easy adjustment.

Dimensions, Approximate: 4 5/8 in. high x 2 7/8 in. wide x 1 1/16 in. deep (117 mm high x 73 mm wide x 27 mm deep)

Electrical Ratings: .1 at 12Vdc; 0.1 at 24Vac; 0.1 at 250, 500, 750 mV

Mounting: Vertical Mounting

Sensor Element: Bimetal

	Product Number	Application	Color	Terminal Designations	Switch Type	Switching Action	Anticipator (heating)	Stages	Setting Temperature Range		Includes
									(F)	(C)	
•	T827A1000	12 Vdc, 24 Vac, millivolt, heating only systems	Beige	two blank screw terminals	Snap action	SPST	0.18A to 0.8A	1 Heat	50 F to 80 F	10 C to 27 C	Positive OFF
*	T827A1018	12 Vdc, 24 Vac, millivolt, heating only systems	Premier White®	two blank screw terminals	Snap action	SPST	0.18A to 0.8A	1 Heat	50 F to 80 F	10 C to 27 C	Positive OFF
*	T827B1009	24 volt control of heating only systems	Beige	two blank screw terminals	Snap action	SPST	0.18A to 0.8A	1 Heat	50 F to 80 F	10 C to 27 C	—
* TRADELINE models • SUPER TRADELINE models											

Non-Programmable Thermostats—Mechanical

T834; T8034 Thermostats



For low voltage control of single-stage heating, cooling or heating-cooling systems.

- **NEW STYLE LOOK.** Integral switches control system and fan switching.
- Mount directly on wall or vertical outlet box (T834C) or horizontal outlet box (T8034) using mounting plate to prevent electrical shorts.

Dimensions, Approximate: (121 mm wide, 73 mm high, 33 mm deep)

4 3/4 in. wide, 2 7/8 in. high, 1 5/16 in. deep

Electrical Ratings: 20 to 30 Vac

Changeover: Manual

Heating Current: 0.18A to 1.0A at 30 Vac max

Cooling Current: 1.5A running, 7.5 inrush at 25 Vac

Switch Type: Mercury

Switching Action: SPDT

Sensor Element: Bimetal

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

193120B Taupe Mounting Plate Accessory

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

Product Number	Application	Color	Mounting	Switch Position		Terminal Designations	Stages	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)
				System	Fan			(F)	(C)		
* T8034C1085	Two transformer systems; jumper Rh and Rc for single transform	Taupe	Horizontal	OFF-HEAT-COOL	AUTO-ON	Rc, Rh, G, W, Y	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
* T8034C1341	Single stage low voltage heating/cooling systems	Premier White®	Horizontal	OFF-HEAT-COOL	AUTO-ON	R, G, W, Y, 1, 2	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
• T8034C1424	Single stage low voltage heating/cooling systems	Taupe	Horizontal	OFF-HEAT-COOL	AUTO-ON	R, G, Y, W, 1, 2, O, B	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
• T8034C1481	Single stage low voltage heating/cooling systems	Premier White®	Horizontal	OFF-HEAT-COOL	AUTO-ON	R, G, Y, W, 1, 2, O, B	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
* T834C1137	Single stage low voltage heating/cooling systems	Taupe	Vertical Mounting	OFF-HEAT-COOL	AUTO-ON	R, W, Y, G	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
• T834C2473	Single stage low voltage heating/cooling systems	Taupe	Vertical Mounting	OFF-HEAT-COOL	AUTO-ON	R, G, Y, W, 1, 2, O, B	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac
• T834C2499	Single stage low voltage heating/cooling systems	Premier White®	Vertical Mounting	OFF-HEAT-COOL	AUTO-ON	R, G, Y, W, 1, 2, O, B	1 Heat/1 Cool	55 F to 95 F	13 C to 35 C	adjustable 0.18 A to 1.0 A	fixed 24 to 30 Vac

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical

TS86A PowerPile® Thermostat



For control of automatic, self-powered gas heating systems. Use only with a millivoltage pilot generator.

- Includes heating-only wallplate and cover plate for covering old thermostat mounting marks.
- Temperature scale in Fahrenheit on thermostat.
- Mounts using captive mounting screws included with thermostat.

Dimensions, Approximate: 3 1/4 in. diameter, 1 1/2 in. deep (83 mm diameter, 38 mm deep)

Electrical Ratings: .1A at 750mV

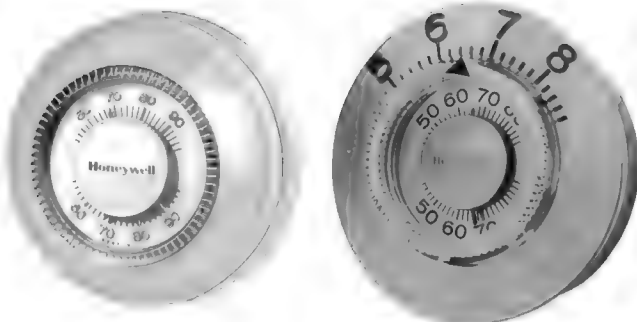
Switch Type: Mercury

Sensor Element: Bimetal

Product Number	Application	Color	Terminal Designations	Switching Action	Stages	Setting Temperature Range		Anticipator (heating)	Includes
						(F)	(C)		
* TS86A1371	750 mV	Taupe	R, W	Dust proof mercury switch.	1 Heat	40 F to 90 F	4 C to 32 C	750 mV only	—
* TS86A1389	750 mV	Taupe	R, W	Dust proof mercury switch.	1 Heat	50 F to 90 F	10 C to 32 C	750 mV only	Positive Off and heat anticipator
* TS86A1421	750 mV	Taupe	R, W	Dust proof mercury switch.	1 Heat	40 F to 90 F	4 C to 32 C	750mV only	EASY-TO-SEE Enlarged scale with raised designations and detents every two degrees

* TRADELINE models • SUPER TRADELINE models

T87F Thermostat-The Round®



Provides temperature control for 24 to 27 Vac residential heating, cooling or heating-cooling systems.

- Available with two- or three-wire wallplate for heating-only, cooling-only, or heating-cooling systems with remote switching.
- Adjustable heat anticipator for comfortable temperature control.
- Use Q539 Subbase in heating and cooling systems requiring system and fan switching at the thermostat location.
- Temperature scale in Fahrenheit on thermostat.
- Separate temperature setting and thermometer scale on thermostat face.
- Honeywell offers other T87F models to meet specific needs and applications:
- The Easy-To-See™ T87F Thermostat has enlarged scale and raised designations.
- The TS86A PowerPile® Thermostat is for use on millivolt systems.

Dimensions, Approximate: 3-1/4 in. diameter, 1-1/2 in. deep (without 137421 Wallplate or Q539 Subbase; 3-11/16 in. diameter, 1-3/4 in. deep with 137421 Wallplate or Q539 Subbase)
(83 mm diameter, 38 mm deep without 137421 Wallplate or Q539 Subbase; 94 mm diameter, 45 mm deep with 137421 Wallplate or Q539 Subbase)

Electrical Ratings: Heating: 1.5A running, 3.5A inrush at 30 Vac maximum; Cooling: 1.5A running, 7.5A inrush at 30Vac maximum

Changeover: Manual

Accuracy: 1 F (0.5 C)

Mounting: round

Sensor Element: Bimetal

Switch Type: Mercury

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

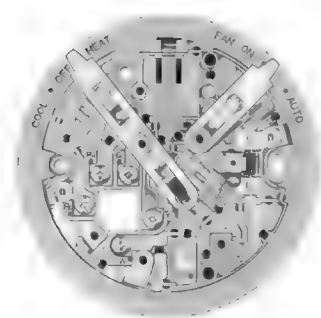
- 104456B** Two terminal heat only T87 wallplate
- 137421AE** Taupe wallplate assembly with positive off
- 137421K** Taupe Wallplate assembly for T87F with resistor, wallplate clip and screw
- 137421R** White Wallplate assembly for T87F with resistor, wallplate clip and screw
- 198170A** Designer Beige Adapter Kit
- 198172** Cover Ring for T87 Designer Beige models.
- 199933** Cover Ring for Taupe T87 models.
- 202687A** Premier White Adapter Kit
- 32005439-001** Taupe Adapter Kit
- TG587F1008** Thermostat Guard for T87/Q539 with see-through face
- TG587F1016** Thermostat Guard for T87/Q539 with opaque window

Non-Programmable Thermostats—Mechanical

Product Number	Application	Color	Terminal Designations	Switching Action	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Comments	Includes
					(F)	(C)				
T87F1826	Single stage heat and cool systems	Taupe	R, W	SPST	60 F to 90 F	16 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Adjustable temperature range stops.	Locking cover and locking dial
• T87F1859	Single stage heat and cool systems	Taupe	R, W, Y	SPDT	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Series 20 137421A Wallplate.	6 in. (152 mm) cover ring, 137421A 3 terminal wallplate
* T87F1867	Single stage heat and cool systems	Taupe	R, W, Y	SPDT	50 F to 90 F	10 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	With Positive Off (series 20).	6 in. (152 mm) cover ring, 137421AE 3 terminal Wallplate
T87F2360	Single stage heat and cool systems	Taupe	R, W	SPST	45 F to 75 F	7 C to 24 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Fixed temperature range stops at 45F and 75F.	104456B Wallplate
* T87F2782	Single stage heat and cool systems	Taupe	R, W, Y	SPDT	35 F to 65 F	2 C to 18 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Adjustable temperature range stops.	137421K three-terminal wallplate. Locking cover and locking dial. Allen head wrench and screws included for locking cover.
* T87F2790	Single stage heat and cool systems	Taupe	R, W, Y	SPDT	45 F to 75 F	7 C to 24 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Field adjustable temperature range stops; stop factory-set at 68F (20C).	Locking cover and locking dial
T87F2816	Single stage heat and cool systems	Taupe	R, W	SPST	38 F to 72 F	3 C to 22 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Meets DoD Specifications. Fixed limited range between 38 and 72 F.	Locking cover; no thermometer; wallplate and screws included.
* T87F2873	Single stage heat and cool systems	Taupe	R, W	SPST	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Concealed 2-terminal heating only wallplate.	104456B Wallplate
* T87F3467	Single stage heat and cool systems	Taupe	R, W, Y	SPDT	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	EASY-TO-SEE model with Large raised markings. A click at each 2 degree setpoint change	137421K Wallplate and switch position labels
* T87F3855	Single stage heat and cool systems	Premier White®	R, W	SPST	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Concealed 2-terminal heating only wallplate.	104456B Wallplate
* T87F5199	Single stage heat and cool systems	Premier White®	R, W, Y	SPDT	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	EASY-TO-SEE model with Large raised markings. A click at each 2 degree setpoint change	137421R Wallplate and switch position labels.
* TRADELINE models • SUPER TRADELINE models										

Non-Programmable Thermostats—Mechanical

Q539 Thermostat Subbases



Provide system and fan switching, and mounting for T87F Thermostats.

- Include cooling anticipator and letter-coded screw terminals for electrical connections.
- Wide range of switching functions fits most heating, cooling or heating-cooling applications.
- Mount directly on wall or on an outlet box using optional 6 in. (152 mm) cover ring or adapter plate assembly.

Dimensions, Approximate: 3 11/16 in. diameter, 1 3/4 in. deep (94 mm diameter, 45 mm deep)

Electrical Ratings: 2A at 24 Vac

Accessories:

198170A Designer Beige Adapter Kit

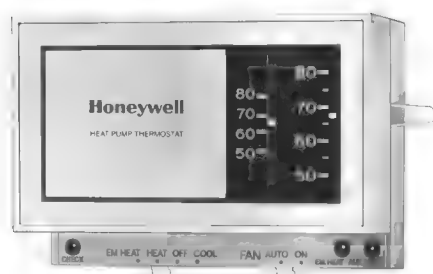
202687A Premier White Adapter Kit

32005439-001 Taupe Adapter Kit

	Product Number	Color	Switch Position		Terminal Designations	Comments
			System	Fan		
*	Q539A1014	Taupe	COOL-OFF-HEAT	ON-AUTO	R,W,Y,B,G,O	Single Transformer Conventional heating-cooling systems.
*	Q539A1147	Taupe	COOL-OFF-HEAT	ON-AUTO	Rc,W,Y,G,Rh	Independent heat-cool circuits for conventional systems.
*	Q539A1451	Premier White®	COOL-OFF-HEAT	ON-AUTO	R,Rh,W,Y,G	Same as Q539A1147, except Premier White.
*	Q539A1469	Premier White®	COOL-OFF-HEAT	ON-AUTO	R,W,Y,B,G,O	Same as Q539A1014, except Premier White.
	Q539B1005	Taupe	COOL-OFF-HEAT	—	R,W,Y,O,B	Internal system fan control. Conventional systems.
*	Q539C1020	Taupe	COOL-OFF	ON-AUTO	R,Y,G,O	Use on cooling only systems.
	Q539G1000	Taupe	HEAT-OFF	ON-AUTO	R,W,B,G,1	For summer fan operation; without fan control.
	Q539H1009	Taupe	None	ON-AUTO	R,W,Y,G,Z	Extra terminal for low volt fan control in AUTO position.
	Q539J1006	Taupe	COOL-OFF-HEAT	AUTO-ON	R,W,Y,B,G,O,P	Automatic fan on both heating and cooling. For single stage heat pump and electric heat systems.
*	Q539J1154	Premier White®	COOL-OFF-HEAT	AUTO-ON	R,W,Y,B,G,O,P	Same as Q539J1006, except Premier White.
* TRADELINE models • SUPER TRADELINE models						

Non-Programmable Thermostats—Mechanical-Heat Pump

T841 Multistage and Heat Pump Thermostats



Provide low voltage (24 Vac) control of two-stage heating and one-stage cooling heat pump systems using manual changeover.

- Coiled bimetal element operate dust-free mercury switches.
- Heat anticipators are adjustable or fixed; cooling anticipator is fixed.
- Mount directly on wall or horizontal outlet box; no separate subbase necessary.
- T841E model available for two-stage gas valves.

Dimensions, Approximate: 3 1/2 in. high, 5 1/4 in. wide, 2 1/16 in. deep
(89 mm high, 133 mm wide, 52 mm deep)

Interstage Differential Temperature: 1 F (0.6 C)

Electrical Ratings: 24 to 27 Vac.

Changeover: Manual Cool

Heating Current: 1st Stage 1.5A running, 6.5A inrush at 30 Vac max.
2nd Stage 1.2 running and 6.5A inrush at 30 Vac max.

Cooling Current: 1.5A running, 6.5A inrush at Max. 30 Vac

Mounting: Horizontal

Sensor Element: Bimetal

Switch Type: Mercury

Anticipator (cooling): 0 to 1.5A fixed

Fan Operation: Auto Fan in EM. HEAT except T841A1308

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

209652A Beige Universal Cover Plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate.

Product Number	Applica- tion	Color	Switch Position		Terminal Designatio ns	Setting Temperature Range		Anticipator (heating)	Indicating LEDs	Stages	Comments
			System	Fan		(F)	(C)				
T841A1217	Multistage Heat Pumps	Beige	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W2, W3, E, G, X, O, B, L	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0.1 to 1.2A adj.	AUX.HT., EM.HT.	—	For use where E and W2 may be jumpered. Fixed anticipators powered through O terminal. EM. HT. LED also indicates compressor malfunction.
* T841A1308	Multistage Heat Pumps	Beige	OFF- HEAT- COOL- EM. HEAT	AUTO- ON; No Auto Fan in EM. HT.	R, Y, W2, E, G, X, O, B, L	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	AUX.HT., EM.HT.	—	For use where E and W2 may be jumpered. EM. HT. LED also indicates compressor malfunction.
* T841A1498	Multistage Heat Pumps	Beige	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W, X, G, B, O, H	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	EM.HT.	—	Direct replacement for T841A1274.
* T841A1506	Multistage Heat Pumps	Premier White®	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W, X, G, B, O, H	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	EM.HT.	—	Direct replacement for T841A1274.
* T841A1563	Multistage Heat Pumps	Premier White®	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W2, W3, E, G, X, O, B	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	—	—	No thermometer.
T841A1613	Multistage Heat Pumps	Premier White®	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W2, W3, E, G, X, O, B	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0.1 to 1.2A adj.	—	—	Same as T841A1050, except Premier White.
* TRADELINE models • SUPER TRADELINE models											

Non-Programmable Thermostats—Mechanical-Heat Pump

	Product Number	Applica- tion	Color	Switch Position		Terminal Designatio ns	Setting Temperature Range		Anticipator (heating)	Indicating LEDs	Stages	Comments
				System	Fan		(F)	(C)				
*	T841A1696	Multistage Heat Pumps	Taupe	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W1, W2, E, G, X, O, B, L	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	AUX.HT., EM.HT.	—	EASY-TO-SEE model with Large raised markings. A click at each 2 degree setpoint change.
•	T841A1712	Multistage Heat Pumps	Taupe	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W2, W3, E, G, X, O, B	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0.1 to 1.2A adj.	AUX.HT., EM.HT.	—	—
•	T841A1738	Multistage Heat Pumps	Premier White®	OFF- HEAT- COOL- EM. HEAT	AUTO- ON	R, Y, W2, W3, E, G, X, O, B	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0.1 to 1.2A adj.	AUX.HT., EM.HT.	—	—
	T841B1000	Multistage Heat Pumps	Beige	OFF- HEAT- COOL	AUTO- ON	R, Y1, W1, W2, G, X, O, B	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0.1 to 1.2A adj.	—	—	For “No Emergency Heat” applications.
*	T841B1059	Multistage Heat Pumps	Taupe	HEAT- OFF- COOL	AUTO- ON	W1, W2, B, G, R, X1, Y, O	45 F to 85 F	7 C to 29 C	First stage 0 to 1.5A fixed; Second stage 0 to 1.5A fixed	—	2 Heat/ 1 Cool	For “No Emergency Heat” applications. Easy-to-See model with large raised markings. Clicks at each two-degree setpoint change.
*	T841E1007	Multistage- two stage gas valve	Premier White®	OFF- HEAT- COOL	AUTO- ON	R, W1, W2, Y, G, B	45 F to 85 F	7 C to 29 C	First stage 0.1 to 1.2A adj.; Second stage 0 to 1.5A fixed	HI, LOW	—	For use on two- stage gas valve with one stage cooling applications. Low speed LED goes off when high speed comes on.
* TRADELINE models • SUPER TRADELINE models												

Non-Programmable Thermostats—Mechanical-Heat Pump

T874 Multistage and Heat Pump Thermostats



Dimensions, Approximate: (including Q674 subbase) 3 9/16 in. high, 5 5/8 in. wide, 2 3/16 in. deep
(91 mm high, 143 mm wide, 56 mm deep)

Color: Beige

Mounting: Horizontal

Temperature Differential: 4F (2C) minimum between heating and cooling.

Sensor Element: Bimetal

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Provide 24 Vac control of multistage heating, cooling, and heating-cooling systems including heat pump systems.

- Require Q674 Thermostat Subbase to provide wiring terminals, mounting base, and System and Fan switching.
- Coiled bimetal elements operate dust-free mercury switches.
- External levers and scale for temperature setting on top of thermostat case.

Accessories:

193121A Beige Mounting Plate Assembly includes adapter ring, wall cover plate and screws.

194559R T874 Locking Cover and Lever Assembly with Thermometer.

194559S T874 Locking Cover and Lever Assembly without Thermometer.

209652A Beige Universal Cover Plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate.

4074ECK Locking Lever Stops.

TG504A1025 Thermostat Guard

TG504A1033 Thermostat Guard

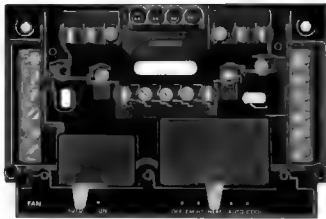
Product Number	Switch Type	Stages	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Comments	Includes
			(F)	(C)				
T874A1010	Mercury	1 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.5A fixed	—	Locking cover with thermometer, non-adjustable range stop (limits max. heat to 72 F, limits min. cool to 78 F) and field adjustable locking levers.
* T874A1036	Mercury	1 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.5A fixed	—	locking cover with thermometer and field-adjustable locking levers.
• T874A1150	Mercury	1 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.5A fixed	—	Locking cover with thermometer; Field adjustable range stops and locking lever.
T874A1176	Mercury	1 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.0A fixed	Non-adjustable range stops set at 72F (max. heat) and 78F (min. cool); field adjustable locking levers. Meets DoD specifications.	Locking cover without thermometer.
* T874B1019	Mercury	1 Heat/ 2 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	Stage1 fixed 0 to 1.2A; Stage 2 fixed 0 to 1.0A	—	locking cover with thermometer and field-adjustable locking levers.
T874C1000	Mercury	2 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.5A fixed	—	—
* T874C1018	Mercury	2 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	0.1 to 1.2A Adj.	0 to 1.5A fixed	—	locking cover with thermometer and field-adjustable locking levers.
• T874D1165	Mercury	2 Heat/ 2 Cool	42 F to 88 F	6 C to 31 C	Stage 1 adj. 0.1 to 1.2A; Stage 2 adj. 0.1 to 1.2A	Stage1 fixed 0 to 1.2A; Stage 2 fixed 0 to 1.0A	—	locking cover with thermometer, field adjustable range stops and field adjustable locking covers
* T874E1016	Mercury	2 Cool	42 F to 88 F	6 C to 31 C	—	Stage1 fixed 0 to 1.2A; Stage 2 fixed 0 to 1.0A	—	locking cover with thermometer and field-adjustable locking levers.
* T874F1015	Mercury	2 Heat	42 F to 88 F	6 C to 31 C	Stage 1 adj. 0.1 to 1.2A; Stage 2 adj. 0.1 to 1.2A	—	—	locking cover with thermometer and field-adjustable locking levers.
T874G1246	Mercury	2 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	Stage1 fixed 0.1 to 1.2A; Stage 2 adj. 0.1A to 1.2A	0 to 1.0A fixed	—	—
* TRADELINE models • SUPER TRADELINE models								

Non-Programmable Thermostats—Mechanical-Heat Pump

Product Number	Switch Type	Stages	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Comments	Includes
			(F)	(C)				
T874N1016	Mercury	2 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	Stage 1 adj. 0.1 to 1.2A; Stage 2 adj. 0.1 to 1.2A adj.	0 to 1.5A fixed	Use with Q674F1220 only (available separately)	—
T874R1152	Mercury	2 Heat/ 1 Cool	42 F to 88 F	6 C to 31 C	Stage 1 fixed 0 to 1.0A; Stage 2 fixed 0 to 1.0A.	0 to 1.2A fixed	Use with Q674L1207 only (available separately) Available in Y594 pack.	—
T874W1015	Mercury	3 Heat/ 2 Cool	42 F to 88 F	6 C to 31 C	Stage 1 fixed 0 to 1.0A; Stage 2 fixed 0 to 1.5A; Stage 3 fixed 0 to 1.5A	Stage1 fixed 0 to 1.2A; Stage 2 fixed 0 to 1.0A	—	—

* TRADELINE models • SUPER TRADELINE models

Q674 Thermostat Subbases



Application: Subbase for T874 Thermostats

Dimensions, Approximate: 3 9/16 in. high, 5 5/8 in. wide, 5/16 in. deep

(91 mm high, 143 mm wide, 8 mm deep)

Color: Beige

Electrical Ratings: 2.5A at 30 Vac (7.5A Inrush)

Provide wiring terminals, mounting base, and system and fan switching for T874 Multistage Thermostats.

- Mount on wall or horizontal outlet box.
- Adapter plate is available for mounting on vertical outlet box.
- Subbases available without LED (light emitting diode) or with one LED.

Accessories:

193121A Beige Mounting Plate Assembly includes adapter ring, wall cover plate and screws.

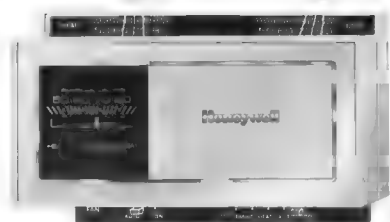
209652A Beige Universal Cover Plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate.

Product Number	Switch Position		Terminal Designations	LEDs	Comments
	System	Fan			
* Q674A1019	HEAT-AUTO-COOL	AUTO-ON	Rh, Rc, Y1, Y2, W1, W2, G	—	—
Q674B1018	COOL-OFF-HEAT	AUTO-ON	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	With isolated fan
* Q674B1034	COOL-OFF-HEAT	AUTO-ON	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	—
Q674B1075	COOL-OFF-HEAT	AUTO-ON	R,Y1,Y2,W1,W2,G,O,B	—	Auto fan on both heat and cool. For electric heat applications.
Q674B1216	COOL-OFF-HEAT	AUTO-ON	R,Y1,Y2,W1,W2,W3,G,O,B,T	—	Use with C815A1005 for outdoor reset.
* Q674C1058	OFF-AUTO	AUTO-ON	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	—
* Q674D1040	None	NONE	Rh,Rc,Y1,Y2,W1,W2	—	—
* Q674E1049	OFF-HEAT-AUTO-COOL	AUTO-ON	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	O and B terminals are continuously energized in the AUTO mode.
Q674E1379	OFF-HEAT-AUTO-COOL	AUTO-ON	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	—
Q674F1022	OFF-EM.HT.-HEAT-AUTO-COOL	AUTO-ON	R,Y1,Y2,W1,W2,G,O,B,E,X1,X2	1	O and B terminals are continuously energized in the AUTO mode. Includes field selectable inserts for LED.
Q674F1212	OFF-COOL-AUTO-HEAT-EM.HT.	AUTO-ON	R,Y,W2,W3,G,O,E,L,X	2	—
Q674F1220	OFF-COOL-AUTO-HEAT-EM.HT.	AUTO-ON	R,W1,W2,G,L,C,K,X	2	—
* Q674G1070	OFF-AUTO	—	Rh,Rc,Y1,Y2,W1,W2,G,O,B	—	O and B terminals are continuously energized in the AUTO mode.
Q674J1043	EM.HT.-AUTO-OFF	AUTO-ON	R,Y,W,G,O,B,F,T,X2	2	—
Q674L1207	EM.HT.-HEAT-OFF-COOL	AUTO-ON	R,Y,W2,W3,G,O,B,E,L,X	2	—

* TRADELINE models • SUPER TRADELINE models

Non-Programmable Thermostats—Mechanical-Heat Pump

Y594 Combination Packs for Heat Pump and Other Multistage Applications



Combine appropriate T874 Multistage Thermostat and Q674 Subbase for specific applications.

Dimensions, Approximate: (including Q674 subbase) 3 9/16 in. high, 5 5/8 in. wide, 2 3/16 in. deep

((including Q674 subbase) 91 mm high, 143 mm wide, 56 mm deep)

Changeover: Auto

Temperature Differential: 4F (2C) minimum between heating and cooling.

Sensor Element: Bimetal

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

209652A Beige Universal Cover Plate, 7 3/8 in. (187 mm) x 5-3/4 in. (146 mm) including screws and adapter plate.

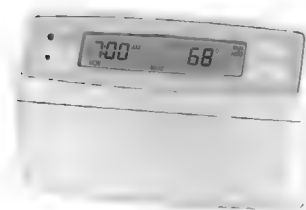
Product Number	Color	Mounting	Switch Position	Terminal Designations	LEDs	Setting Temperature Range		Comments	Includes
			System			(F)	(C)		
* Y594D1347	Beige	Horizontal	OFF-HEAT-COOL-AUTO	W1,W2,G,Y1,Y2,Rc,Rh	—	42 F to 88 F	6 C to 31 C	For conventional multistage heating-cooling applications.	Q674E1403 subbase & T874D1942 thermostat
Y594G1161	Beige	Horizontal	OFF-AUTO-EM. HEAT	R,Y,W,G,O,B,F,T,X2	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications. With outdoor reset;	Q674J1043 subbase & T874G1204 thermostat
* Y594G1252	Beige	Horizontal	OFF-HEAT-COOL-AUTO-EM. HEAT	R,Y,W2,W3,G,O,E,L,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674F1212 subbase & T874G1246 thermostat
• Y594G1419	Beige	Horizontal	OFF-HEAT-COOL-AUTO-EM. HEAT	R,Y1,W1,W2,W3,G,O,B,E,X,X1,X2	AUX.HT., EM.HT., CHECK	42 F to 88 F	6 C to 31 C	For heat pump applications. Includes locking cover with thermometer, field adjustable range stops and field adjustable locking levers.	Q674G1642 subbase & T874F1444 thermostat.
• Y594G1476	Premier White®	Horizontal	OFF-HEAT-COOL-AUTO-EM. HEAT	R,Y1,W1,W2,W3,G,O,B,E,X,X1,X2	AUX.HT., EM.HT., CHECK	42 F to 88 F	6 C to 31 C	Same as Y594G1419, except Premier White	Q674F1477 subbase & T874G1741 thermostat
* Y594G1567	Beige	Horizontal	OFF-AUTO-EM. HEAT	R, Y, W, X, G, O, B	EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674J1209 subbase & T874G1865 thermostat
* Y594G1633	Beige	Horizontal	OFF-HEAT-COOL-AUTO-EM. HEAT	R,Y,W2,G,O,B,E,L,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	Replaces Coleman/Evcon Y594G1377.	Q674F1584 subbase & T874G1972 thermostat
* Y594G1674	Beige	Horizontal	ON-OFF-SUP. HEAT	R,Y,G,W2,L,C,E,O	SUPL.HT.	42 F to 88 F	6 C to 31 C	Replaces Carrier Y507J1035 which consists of T874G1055 and Q674J1035.	Q674J1274 subbase & T874G2004 thermostat
Y594H1012	Beige	Horizontal	OFF-AUTO	R,Y,G,O,B,L,X	MALFUNCTION	42 F to 88 F	6 C to 31 C	Use on single stage heat pump applications.	Q674C1249 subbase & T874H1062 thermostat
* TRADELINE models • SUPER TRADELINE models									

Non-Programmable Thermostats—Mechanical-Heat Pump

	Product Number	Color	Mounting	Switch Position	Terminal Designations	LEDs	Setting Temperature Range		Comments	Includes
				System			(F)	(C)		
*	Y594R1243	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W2,W3,G,O,B,E,L,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1207 subbase & T874R1152 thermostat
	Y594R1292	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W,G,O,B,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1512 subbase & T874R1467 thermostat
*	Y594R1300	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W2,G,O,B,E,L,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1520 subbase & T874R1475 thermostat
•	Y594R1425	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R, Y, W1, W2, W3, G, O, B, E, L, X, X2	AUX.HT., EM.HT., CHECK	42 F to 88 F	6 C to 31 C	For heat pump applications. Includes locking cover with thermometer. Field adjustable range stops and locking levers. Removable jumper between W1 and Y.	Q674L1587 subbase & T874R1616 thermostat
*	Y594R1615	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W2,W3,G,O,B,E,L,X	AUX.HT., EM.HT., CHECK	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1710 subbase & T874R1822 thermostat
*	Y594R1664	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R, Y, W, X, G, B, O, H, T	EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1736 subbase & T874R1871 thermostat
*	Y594R1672	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R, Y, W, X, G, B, O, H, T	EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1736 subbase & T874R1889 thermostat & C815A1054 outdoor thermistor
*	Y594R1680	Premier White®	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W2,W3,G,O,B,E,L,X	AUX.HT., EM.HT., CHECK	42 F to 88 F	6 C to 31 C	Same as Y594R1615, except Premier White	Q674L1751 subbase & T874R1897 thermostat
*	Y594R1763	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,W,G,O,B,T,F,X2	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	For heat pump applications	Q674L1827 subbase & T874R1954 thermostat
*	Y594R1797	Beige	Horizontal	OFF-HEAT-COOL-EM. HEAT	R,Y,G,W2,O,B,E,L,X	AUX.HT., EM.HT.	42 F to 88 F	6 C to 31 C	Replaces Coleman/Evcon Y594R1235.	Q674L1868 subbase & T874R1988 thermostat
* TRADELINE models • SUPER TRADELINE models										

Programmable Thermostats—Electronic

PC8900 Perfect Climate Comfort Center Control System



Control panel for the Perfect Climate Comfort Center™ Control System. Mounts in the living space and accurately measures and controls room temperature and humidity. Use with the W8900 Remote Control Module.

- Automated, all-in-one comfort control.
- Large, continuously lighted liquid crystal display (LCD).

Dimensions, Approximate: 4 in. high, 6 3/8 in. wide, 1 5/8 in. deep.
(102 mm high, 162 mm wide, 41 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: 45 F to 88 F (7 C to 31 C)

Differential Temperature: 1 F (0.5 C)

Programmability: 7 Day Program

Changeover: Automatic, Manual Selectable

Humidity Ratings: 5 to 90% RH, non-condensing

Humidity Setting Range: Cooling: 40 to 80% RH.

Heating: 10 to 80% RH.

Currents, Heating: See W8900

- Seven-day (auto copy) programming.
- Simultaneous display of heat and cool setpoints.
- No batteries required; indefinite program retention.
- Circulation fan setting improves indoor air quality.
- Compatible with 99 percent of residential 24V heating and cooling equipment.
- Requires only four wires for installation.
- All system accessories can be wired to the W8900 Remote Module.
- Keyboard lockout (field-configurable) protection available.
- Automatic or manual changeover.
- F or C temperature display
- 12- or 24-hour clock.
- Adaptive Intelligent Recovery™ or conventional recovery.
- Humidity control in heating or cooling; frost control optional with outdoor sensor.
- Outdoor, remote, and discharge temperature sensor available.
- Fan overrun in cooling.
- Ventilation control.

Currents, Cooling: See W8900

Currents, Fan: See W8900

Sensor Element: Thermistor

Approvals:

Federal Communications Commission: Class B

NEMA Standard: Conforms to NEMA Standard DC3 for scale accuracy

Accessories:

205224A Premier White® cover plate 8 1/2 in. (216 mm) x 6 in. (152 mm)

32004796-001 Door assembly for PC8900A with programming label.

	Product Number	Color	Mounting	Switch Position		Terminal Designations	Stages	Includes
				System	Fan			
*	PC8900A1007	Premier White®	Mounts directly on the wall using mounting screws and anchors provided	HEAT-OFF-AUTO-COOL-EM. HT	AUTO-ON	1,2,3,4 to W8900	Staging controlled by W8900	System LED—lights when equipment is running Check LED—lights to alert homeowner to HVAC maintenance or service needs

* TRADELINE models • SUPER TRADELINE models

Programmable Thermostats—Electronic

W8900 Perfect Climate Comfort Center Remote Modules



Mount near equipment; heating, cooling, ventilation, dehumidification equipment and sensors are wired to the W8900.

- Provide humidity and ventilation control output.
- Compatible with most 24 Vac systems.
- Mount directly on the wall near HVAC equipment or cold air return.
- Select models provide humidity control with fan.

Dimensions, Approximate: 6 3/8 in. wide, 8 3/4 in. high, 2 in. deep.
(163 mm wide x 222 mm high, 51 mm deep)

Ambient Temperature Range: -40 F to +150 F (-40 C to +66 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 1.5A running, 3.5A inrush

Currents, Cooling: 1.5A running, 7.5A inrush

Currents, Fan: 0.5A running, 2.5A inrush

Approvals:

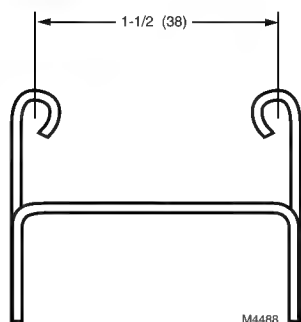
Federal Communications Commission: Class B

NEMA Standard: Conforms to NEMA Standard DC3 for scale accuracy

	Product Number	Application	Color	Mounting	Power Method	Stages	Sensors Available		
							Remote	Discharge	Outdoor
*	W8900A1004	Electric Single Stage, Electric Multistage, Oil, Gas	Gray	Mounts directly on the wall using mounting screws and anchors provided	Hardwired	Up to 2 Heat/ Up to 2 Cool	Yes, optional	Yes, optional	Yes, optional
*	W8900A1012	Electric Single Stage, Electric Multistage, Oil, Gas	Gray	Mounts directly on the wall using mounting screws and anchors provided	Hardwired	Up to 2 Heat/ 1 Cool	Yes, optional	Yes, optional	Yes, optional
*	W8900B1002	Heat Pump Systems	Gray	Mounts directly on the wall using mounting screws and anchors provided	Hardwired	Up to 3 Heat/ Up to 2 Cool	Yes, optional	Yes, optional	Yes, optional
*	W8900C1000	Electric Multistage with Reheat Humidity Control, Electric Single Stage, Oil, Gas	Gray	Mounts directly on the wall using mounting screws and anchors provided	Hardwired	Up to 2 Heat/ Up to 2 Cool	Yes, optional	Yes, optional	Yes, optional
* TRADELINE models • SUPER TRADELINE models									

Programmable Thermostats—Electronic

C7089 Outdoor Sensor



Senses outdoor temperature for display on the PC8900 Control Panel, or Chronotherm T8600 or T8500 family thermostats, at the touch of a key.

- Convenience feature for homeowners.
- Encapsulated to protect against water and contaminants.
- Mounting clip allows easy sensor positioning on siding or soffit.
- Includes 60 in. leadwires.
- May be located up to 200 feet away from W8900 Remote Module.
- Positive temperature coefficient thermistor sensor.
- Factory calibrated; no field calibration required.

Dimensions, Approximate: 2 1/4 in. by 3/8 in. with 60 in. leadwires.
(57 mm by 10 mm with 1524 mm leadwires.)

Ambient Temperature Range: -40 F to +128 F (-40 C to +53 C)

Humidity Ratings: 5 to 95% RH, non-condensing

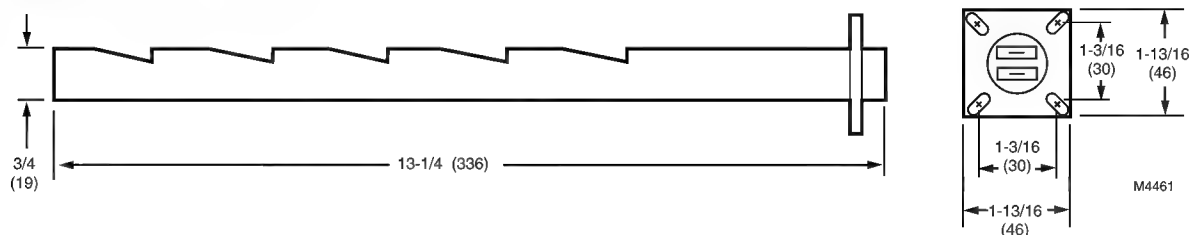
	Product Number	Application	Mounting	Used with
*	C7089A1002	Sensor	Mounting Clip provided for outside of living space mounting using locally obtained mounting hardware.	PC8900, W8900
*	C7089B1000	Sensor	Mounting Clip provided for outside of living space mounting using locally obtained mounting hardware.	Chronotherm IV, T8600 and T8500 Thermostats
* TRADELINE models • SUPER TRADELINE models				

C7100 Discharge Sensor



Used to sense temperature in discharge duct.

- Use with PC8900 Control Panel and W8900 Remote Module.
- Use to troubleshoot system operation.
- Platinum positive temperature coefficient sensor.
- Factory calibrated; no settings or field calibration required.



Dimensions, Approximate: 1 13/16 in. square.

Element Insertion Length: 13 1/4 in.

(46 mm square.) (Element Insertion Length: 336 mm)

Ambient Temperature Range: 40 F to 150 F (4 C to 66 C)

Humidity Ratings: 5 to 95% RH, non-condensing

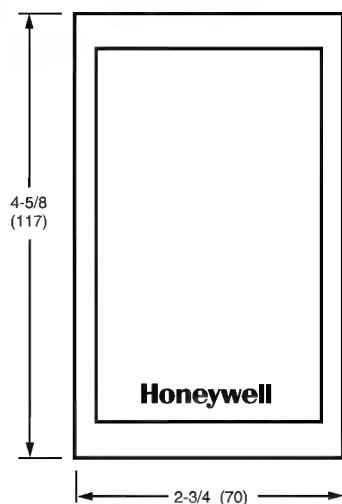
	Product Number	Application	Mounting	Comments
	C7100A1015	Sensor	Mounts in discharge air duct, near air exchanger in a 2 by 4 in. outlet box or on a flat duct or plenum surface. The temperature sensor probe passes through a 7/8 in. knockout in the 2 by 4 in. outlet box.	Sensor Resistance 3,484 ohms at 77 F (25 C)
* TRADELINE models • SUPER TRADELINE models				

C7189 Remote Indoor Sensor



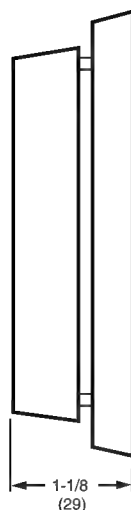
Used with PC8900 Control Panel and W8900 Remote Module in remote sensor applications.

- May be used for temperature averaging between PC8900 Control Panel and C7189A Sensor for improved comfort.
- Capable of remote temperature sensing and control with PC8900 Control Panel.
- Mounts in the living space up to 200 feet away from the W8900 Remote Module.
- Negative temperature coefficient thermistor sensing element.
- Easy to install and use.
- Factory calibrated; no field calibration required.

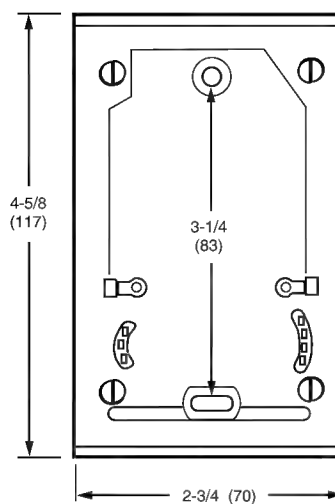


M4465

FRONT VIEW



SIDE VIEW



FRONT VIEW (COVER OFF)

Dimensions, Approximate: 2 3/4 in. wide, 4 5/8 in. high, 1 1/8 in. deep
(70 mm wide, 117 mm high, 29 mm deep)

Ambient Temperature Range: 45 F to 88 F (7 C to 31 C)

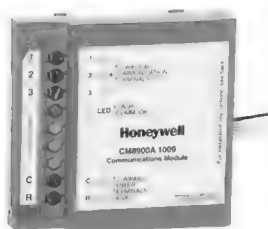
Setting Temperature Range: See PC8900

Humidity Ratings: 5 to 95% RH, non-condensing

	Product Number	Application	Color	Mounting
*	C7189A1001	Sensor	Premier White®	Mounts directly on the wall using mounting screws and anchors provided
* TRADELINE models • SUPER TRADELINE models				

Programmable Thermostats—Electronic

CM8900 Communication Module



Plugs directly into W8900 to allow communication via telephone to change settings.

- Use with PC8900/W8900 Perfect Climate Comfort Center and W8735 Telephone Access Module.
- Provides remote telephone access to the HVAC system.
- CM8900 snaps into any new or existing W8900 Module.
- W8735 Telephone Access Module connects to the CM8900.
- Homeowners can call in via touch-tone telephone and passcode to perform thermostat-related functions and check/change the status of their home system.
- Telephone Access Module can call up to three pre-designated phone numbers to indicate extended power outage, extreme hot/cold temperatures or other heating/cooling problems.

Humidity Ratings: 5 to 95% RH, non-condensing

	Product Number	Application	Color	Mounting
*	CM8900A1009	Used with PC8900; W8900 Comfort Control Center to allow telephone communication.	Gray	On W8900
* TRADELINE models • SUPER TRADELINE models				

Y8735B Communication and Telephone Access Modules

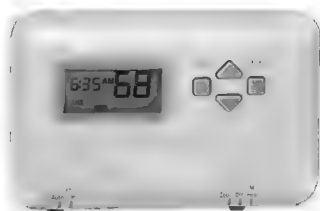


Consists of a W8735B Telephone Access Module and a CM8900 Communicating Module.

- Use with the PC8900/W8900 Perfect Climate Comfort Center.
- Provide remote telephone access to the HVAC system.
- CM8900 snaps into any new or existing W8900 module.
- W8735 Telephone Access Module plugs into the CM8900.
- Homeowners can call in-via touch-tone telephone and passcode to check the temperature, change the status of their home's system and perform other thermostat related functions.
- If there's an extended power outage, an extreme hot/cold temperature or other heating/cooling problem, the Telephone Access Module can call up to three pre-designated phone numbers.

	Product Number	Application	Color	Includes
*	Y8735B1001	Used with PC8900; W8900 Comfort Control Center to allow telephone communication.	Gray	1 W8735B1003 Telephone Interface Module and 1 CM8900A1009 Communication Module
* TRADELINE models • SUPER TRADELINE models				

T8000; T8001; T8002 Programmable Thermostats; T8011 Programmable Heat Pump Thermostats; T8024 Programmable Multistage Thermostats



Provides 24 Vac control of heating and cooling systems, including heat pump and multistage systems, with manual changeover from heat to cool.

- Attractive styling complements any decor.
- Pre-programmed for your convenience.
- Program up to four time periods and temperature setpoints.
- Programs and setpoints are permanently held in memory in the event of a power failure.
- Indefinite setpoint temperature hold for added comfort and energy savings.
- Ease-of-use means fewer homeowner questions and increased homeowner satisfaction.
- Large temperature display for quick easy readability.
- T8002 model has backlit display.
- Conveniently sized thermostat (5-1/2 x 3-1/2) with optional decorator cover plates (7-3/8 x 5-3/4) make it easy to install in a variety of locations.
- Keys are located by the display for easy access.
- FAN and SYSTEM switches are located on the lower edge to eliminate accidental setting changes.
- Easy installation, setup and system checkout saves time and increases installer productivity.
- Degree F or C temperature display for added model flexibility.
- Cooling cycle rate is fixed (3 cph), the standard setting for compressors.

Dimensions, Approximate: 3 1/2 in. high, 5 1/2 in. wide, 1 3/16 in. deep (89 mm high, 140 mm wide, 55 mm deep)

Ambient Temperature Range: 30 F to 110 F (-1 C to +43 C)

Setting Temperature Range: 40 F to 99 F (4.5 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 18 to 30 Vac, 24 Vac nominal.

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 0.02A to 1.5A running, 3.5A inrush

Currents, Cooling: 0.02A to 1.5A running, 7.5A inrush

Currents, Fan: 0.02A to 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
					System	Fan			
*	T8000C1002	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Power-Stealing	R,RC,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8000C1010	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Taupe	Horizontal	HEAT-OFF-COOL	AUTO-ON	Power-Stealing	R,RC,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8001C1019	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8002C1000	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,RC,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8002C1018	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Taupe	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,RC,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8011R1006	Heat Pump Systems	Premier White®	Horizontal	HEAT-OFF-COOL-EM. HT	AUTO-ON	Hardwired	R,C,G,W1,W2,Y,O,B, E, L	2 Heat/ 1 Cool
*	T8011R1014	Heat Pump Systems	Taupe	Horizontal	HEAT-OFF-COOL-EM. HT	AUTO-ON	Hardwired	R,C,G,W1,W2,Y,O,B, E, L	2 Heat/ 1 Cool
*	T8024D1002	Gas or oil multistage conventional systems	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,W1,W2,Y,Y2,G,O, B	2 Heat/ 2 Cool
*	T8024D1010	Gas or oil multistage conventional systems	Taupe	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,W1,W2,Y,Y2,G,O, B	2 Heat/ 2 Cool

* TRADELINE models • SUPER TRADELINE models

Programmable Thermostats—Electronic

T8001F Flushmount Programmable Thermostats; T8011F Flushmount Programmable Heat Pump Thermostats; T8024F Flushmount Programmable Multistage Thermostats



Provides 24 Vac control of heating and cooling systems, including heat pump and multistage systems, with manual changeover from heat to cool.

- Attractive ultra-slim styling rising a mere 1/4 in. from the wall.
- Pre-programmed for your convenience.
- Program up to four time periods and temperature setpoints.
- Programs and setpoints are permanently held in memory in the event of a power failure.
- Indefinite setpoint temperature hold for added comfort and energy savings.
- Ease-of-use means fewer homeowner questions and increased homeowner satisfaction.
- Large temperature display for quick easy readability.
- Keys are located by the display for easy access.
- Easy installation, setup and system checkout saves time and increases installer productivity.
- Degree F or C temperature display for added model flexibility.
- Cooling cycle rate is fixed (3 cph), the standard setting for compressors.

Dimensions, Approximate: 4 in. high, 6 7/8 in. wide, 1/4 in. deep
(101 mm high, 173 mm wide, 6 mm deep)

Ambient Temperature Range: 30 F to 110 F (-1 C to +43 C)

Setting Temperature Range: 40 F to 99 F (4 C to 37 C)

Differential Temperature: 2 F (1 C)

Electrical Ratings: 18 to 30 Vac, 24 Vac nominal.

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 0.02A to 1.5A running, 3.5A inrush

Currents, Cooling: 0.02A to 1.5A running, 7.5A inrush

Currents, Fan: 0.02A to 0.5A running, 2.5A inrush

Sensor Element: Thermistor

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
					System	Fan			
*	T8001F1004	Electric heating with cooling including single stage heat pumps	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,G,W,Y,O,B	1 Heat/ 1 Cool
*	T8011F1002	Heat Pump Systems	Premier White®	Horizontal	HEAT-OFF-COOL-EM. HT	AUTO-ON	Hardwired	R,C,W1,W2,Y,G,O,B,E,L	2 Heat/ 1 Cool
*	T8024F1007	Gas or oil multistage conventional systems	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,W1,W2,Y,Y2,G,O,B	2 Heat/ 2 Cool
* TRADELINE models • SUPER TRADELINE models									

T8112C Electronic Programmable Thermostat



Thermostat provides electronic programmable control for 24 Vac heating and cooling systems.

Dimensions, Approximate: 4 in. high, 7 in. wide, 1 1/2 in. deep
(102 mm high, 178 mm wide, 38 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: 45 F to 88 F (7 C to 31 C)

Differential Temperature: 1.2 F (0.67 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

CONSUMER BENEFITS

- Easy to program for energy savings and comfort.
- Separate schedules for weekdays and weekends (5-2 programming).
- Program up to four time and temperature settings per weekday schedule.
- LCD continuously displays time and day, current program period and room temperature.
- Temporarily override the current program with Warmer/Cooler keys.
- Hold Temp key to override the current program indefinitely.

INSTALLER BENEFIT

- Battery powered for increased compatibility.
- Two AA alkaline batteries included.
- bAt Lo is displayed when battery power is low.
- Adjustable heating cycle rate (3, 6 or 9 cph).
- Selectable Fan Operation switch for electric heat systems.

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 0.03A to 1.2A running

Currents, Cooling: 0.03A to 1.2A running

Sensor Element: Thermistor

Accessories:

205224A Premier White® coverplate 8 1/2 in. (216 mm) wide x 6 in. (152 mm) high.

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
					System	Fan			
*	T8112C1007	Electric, Oil, GasT	Taupe	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,Rc,Y,G,W	1 Heat/1 Cool
*	T8112C1023	Electric, Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R, Rc, W, Y, G	1 Heat/1 Cool
* TRADELINE models • SUPER TRADELINE models									

Programmable Thermostats—Electronic

T8112D Electronic Programmable Thermostat



Provides electronic programmable control for 24 Vac heating and cooling systems.

Dimensions, Approximate: 4 in. high, 7 in. wide, 1 1/2 in. deep
(102 mm high, 178 mm wide, 38 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: 45 F to 88 F (7 C to 31 C)

Differential Temperature: 1.2 F (0.67 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

CONSUMER BENEFITS

- Easy to program for energy savings and comfort.
- Separate schedules for weekdays and weekends (5-2 programming).
- Program up to four time and temperature settings per weekday schedule.
- LCD continuously displays time and day, current program period and room temperature.
- Temporarily override the current program with Warmer/Cooler keys.
- Hold Temp key to override the current program indefinitely.

INSTALLER BENEFITS:

- Battery powered for increased compatibility.
- Two AA alkaline batteries included.
- bAt Lo is displayed when battery power is low.
- Adjustable heating cycle rate (3, 6 or 9 cph).
- Selectable Fan Operation switch for electric heat systems.
- Degree F or C temperature display.

Currents, Heating: 0.03A to 1.2A running

Currents, Cooling: 0.03A to 1.2A running

Sensor Element: Thermistor

Accessories:

206391AA Replacement Battery Door, Premier White®

203255AA Taupe Replacement Flip-up Door with buttons

206658AA Premier White® Replacement Flip-up Door with buttons

205224A Premier White® cover plate 8 1/2 in. (216 mm) x 6 in. (152 mm)

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
					System	Fan			
*	T8112D1005	Electric Systems, Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,Rc,Y,G,W	1 Heat/1 Cool
*	T8112D1013	Electric, Oil, Gas	Taupe	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R, Rc, W, Y, G	1 Heat/1 Cool
* TRADELINE models • SUPER TRADELINE models									

Programmable Thermostats—Electronic

T8131; T8132 Electronic Programmable Thermostat



Economical electronic thermostat for 24 Vac single-stage heating and cooling systems.

Dimensions, Approximate: 4 in. high, 7 in. wide, 1 1/2 in. deep
(102 mm high, 178 mm wide, 38 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: 45 F to 88 F (7 C to 31 C)

Differential Temperature: 1.2 F (0.67 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 0.03A to 1.2A running

CONSUMER BENEFITS

- Easy to program for energy savings and comfort.
- Separate schedules for weekdays and weekends (5-2 programming).
- Program up to four time and temperature settings per weekday schedule.
- Usage key tracks energy usage.
- LCD continuously displays time and day, current program period and room temperature.
- Warmer/Cooler keys, accessible through the cover, temporarily override current program.
- Hold Temp key overrides the current program indefinitely.

INSTALLER BENEFITS

- T8131 powered directly by system transformer (requires common connection). Two AA alkaline batteries included as back-up to maintain clock and program settings during a power outage.
- T8132 battery powered with two AA alkaline batteries (included).
- bAt Lo is displayed when battery power is low.
- LED power indicator (indicates 24 Vac is present at R and C terminals on T8131).
- Adjustable heating cycle rate (3, 6 or 9 cph).
- Selectable fan operation switch for electric heat systems.
- Program before or after mounting on the wall.

Currents, Cooling: 0.03A to 1.2A running

Sensor Element: Thermistor

Accessories:

205224A Premier White® cover plate 8 1/2 in. (216 mm) x 6 in. (152 mm)

Replacement Parts:

203255AA Taupe Replacement Flip-up Door with buttons

206391AA Replacement Battery Door, Premier White®

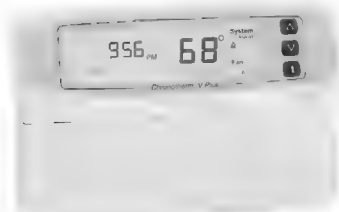
206658AA Premier White® Replacement Flip-up Door with buttons

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
				System	Fan			
T8131C1012	Electric, Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Hardwired	R,C,W,Y,G	1 Heat/1 Cool
T8132C1011	Electric Systems, Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,RC,W,Y,G	1 Heat/1 Cool

* TRADELINE models • SUPER TRADELINE models

Programmable Thermostats—Electronic

T8600; T8601; T8602 Chronotherm® IV Plus Programmable Thermostats; T8611 Chronotherm® IV Plus Programmable Heat Pump Thermostats; T8624 Chronotherm® IV Plus Programmable Multistage Thermostats



Provide electronic control of 24 Vac single-stage or multistage heating and cooling systems, including heat pump systems.

- Large display with bright back lighting makes the LCD very easy to read.
- Full seven-day program capability; different schedules and temperature setpoints selectable every day to match homeowner's flexible schedule.
- Copy key makes programming easier and faster for installer and homeowner.
- Daylight Savings Time (DST) key for quick change in and out of Daylight Savings Time.
- Models available with programmable fan operation for added homeowner comfort.
- Easy temporary temperature setpoint changes for current period, vacation hold (1 to 255 days) or indefinite hold adds to homeowner comfort and energy savings.

Dimensions, Approximate: 3 3/4 in. high, 6 1/16 in. long x 1 9/16 in. deep (95.3 mm high, 154 mm long, 39.7 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: Heat: 40 F to 90 F; Cool: 45 F to 99 F ((Heat) 4.5 C to 32 C (Cool) 7 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 60 Hz

Programmability: 7 Day Program

Changeover: Automatic/Manual Selectable

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 1.5A running, 3.5A inrush

Currents, Cooling: 1.5A running, 7.5A inrush

- Frequently used keys are located near liquid crystal display (LCD) for quick and easy access to information.
- Attractive styling complements any decor to homeowner's delight.
- Models available with C7089B1000 Outdoor Temperature Sensor capability for homeowner convenience; sensor is more accurate than a thermometer.
- Configurable features allow one model to be used to replace many different models (less inventory, no longer need to carry separate models to get these features).
 - F or C temperature display;
 - Automatic or manual changeover;
 - Electric or conventional heat fan operation;
 - Adjustable heating cycle rate.
- Minimum-off time for cooling compressors and heat pumps protects equipment and extends equipment life.
- Easy installation, setup and system test saves installer time and increases productivity.
- System test simplifies troubleshooting and saves time by overriding time delays.
- Adaptive Intelligent Recovery™ control brings room temperature to temperature setpoint at the programmed time, maximizing comfort and energy savings.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages for increased installer and homeowner convenience.
- Powerstealing, hardwired and battery powered models available for virtually all equipment and application needs.
- Universal Versaguard™ Thermostat guards available for added security.
- Adjustable temperature range stops.

Currents, Fan: 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

C7089B1000 C7089 Outdoor Sensor

Replacement Parts:

207396B Replacement Door for Chronotherm IV, Premier White

207396A Replacement Door for Chronotherm IV, Taupe

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages	Sensors Available	Includes
				System	Fan				Outdoor	
• T8600D2028	Electric (Conventional), Oil, Gas	Taupe	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Power-Stealing	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	—
• T8600D2069	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Power-Stealing	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	—
T8600D2143	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Power-Stealing	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	Logo pocket
• T8601D2019	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Hardwired	W,G,R,C,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	—

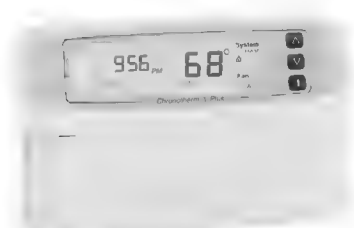
* TRADELINE models • SUPER TRADELINE models

Programmable Thermostats—Electronic

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages	Sensors Available	Includes
				System	Fan				Outdoor	
T8601D2027	Electric Zoning Systems, Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Hardwired	W,G,R,C,Y,O,B,OT,OT,OC,OC	1 Heat/1 Cool	Yes, optional	—
T8601D2076	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Hardwired	W,G,R,C,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	Logo pocket
* T8602D2000	Electric (Conventional), Oil, Gas	Taupe	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Battery	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	—
• T8602D2018	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Battery	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	—
* T8611G2002	Heat Pump Systems	Taupe	Horizontal	HEAT-OFF-AUTO-COOL-EM. HT	AUTO-ON	Hardwired	Y1,W1,W2,G,E,L,R,C,O/B,OT,OT,X1,X2	2 Heat/1 Cool	Yes, optional	—
* T8611G2028	Heat Pump Systems	Premier White®	Horizontal	HEAT-OFF-AUTO-COOL-EM. HT	AUTO-ON	Hardwired	Y1,W1,W2,G,E,L,R,C,O/B,OT,OT,X1,X2	2 Heat/1 Cool	Yes, optional	—
T8611G2051	Heat Pump Systems (Zoning)	Premier White®	Horizontal	HEAT-OFF-AUTO-COOL-EM. HT	AUTO-ON	Hardwired	R,Y,W2,G,E,L,C,O/B,OT,OT,OC,OC	2 Heat/1 Cool	Yes, optional	—
* T8611M2025	Heat Pump Systems	Premier White®	Horizontal	HEAT-OFF-AUTO-COOL-EM. HT	AUTO-ON	Hardwired	R,C,Y1,Y2,W3,E,O/B,G,L,X1,X2,OT,OT	3 Heat/2 Cool	Yes, optional	—
* T8624D2004	Electric Multistage, Electric (Conventional)	Taupe	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Hardwired	R,Rc,Y1,Y2,W1,W2,G,O,B,C,OT,OT	2 Heat/2 Cool	Yes, optional	—
* T8624D2012	Electric Multistage, Electric (Conventional)	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Hardwired	R,Rc,Y1,Y2,W1,W2,G,O,B,C,OT,OT	2 Heat/2 Cool	Yes, optional	—
* TRADELINE models • SUPER TRADELINE models										

Programmable Thermostats—Electronic

T8665 Chronotherm® IV Plus RF Wireless Programmable Thermostat



Provides wireless control of 24 Vac heating and cooling systems. Use with W8665A for single-zone applications or W8665E for zoning applications.

- No wires to thermostat allows easy installation.
- Ideal for retrofit zoning.
- Use when current thermostat inconveniently located or to add a thermostat to a room addition.
- Easy-to-read large display with bright back-lighting.
- Full seven-day flexible program capability; different schedules and temperature setpoints selectable each day.

Dimensions, Approximate: 3 3/4 in. high, 6 1/16 in. long x 1 9/16 in. deep (95.3 mm high, 154 mm long, 39.7 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: Heat: 40 F to 90 F; Cool: 45 F to 99 F (Heat: 4.5 C to 32 C; Cool: 7 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 50 Hz, 60 Hz

Programmability: 7 Day Program

Changeover: Automatic, Manual Selectable

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 1.5A running, 3.5A inrush

- Copy key makes programming easier and faster.
- Daylight Savings Time (DST) key.
- Models available with programmable fan operation.
- Easy temporary temperature setpoint changes for current period, vacation hold (1 to 255 days) or indefinite hold.
- Frequently used keys are conveniently located near LCD.
- Configurable features allows one model to replace many different models.
 - F or C temperature display;
 - Automatic or manual changeover;
 - Electric or conventional heat fan operation;
 - Adjustable heating cycle rate.
- Minimum-off time for cooling compressors and heat pumps protects equipment.
- Easy installation, setup and system test.
- System test simplifies troubleshooting and saves time by overriding time delays.
- Adaptive Intelligent Recovery™ control brings room temperature to temperature setpoint at programmed time.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages.
- Adjustable temperature range stops.

Currents, Cooling: 1.5A running, 7.5A inrush

Currents, Fan: 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Transmitter Range: 3 ft. minimum; 200 ft. maximum.

Transmitter Frequency: 345 MHz.

Accessories:

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate.

Replacement Parts:

207396B Replacement Door for Chronotherm IV, Premier White

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages	Comments
					System	Fan				
*	T8665A1002	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Battery	Wireless	Staging controlled by W8665	Each thermostat is encoded with unique serial numbers. Required accessory (not included): W8665A or W8665E Receiver Module

* TRADELINE models • SUPER TRADELINE models

W8665 RF Receivers



Provides 24 Vac control of heating and cooling systems. Use with T8665A Wireless Chronotherm IV Plus Thermostat.

- W8665A can be used with 1H/1C single-zone conventional applications.
- W8665E can be used with up to three zones when used with a Honeywell Zoning Panel.
- Ideal for retrofit zoning or when current thermostat is in a poor location.

Dimensions, Approximate: 7-5/8 in wide, 7 13/16 in. high, 1 5/8 in. deep (195 mm wide, 198 mm high, 41 mm deep)

Electrical Ratings: 20 to 30 Vac

Humidity Ratings: 5 to 95% RH, non-condensing

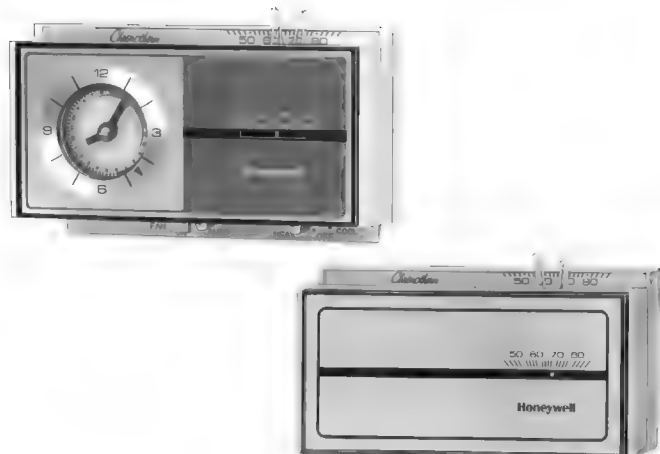
Currents, Heating: 1.5A running

Currents, Cooling: 1.5A running

	Product Number	Application	Mounting	Power Method	Stages	Zones	Comments
*	W8665A1009	Electric, Gas, (Conventional), Oil	Mount Receiver near the equipment on a wall	Hardwired	1 Heat/1 Cool	One	
*	W8665E1000	Electric Multistage (Conventional), Electric Single Stage, Heat Pump Systems	Mount Receiver near the equipment on a wall	Hardwired	Up to 3 Heat/ Up to 2 Cool	Up to Three	Zone Panels control multiple stages of heat or cool.
* TRADELINE models • SUPER TRADELINE models							

Programmable Thermostats—Mechanical

T8090; T8095; T8190; TS8095 Chronotherm® Thermostats



Low voltage setback thermostats combine energy saving temperature control with a self-starting 24 Vac clock/timer.

Dimensions, Approximate: 3 9/16 in. high, 6 3/4 in. wide, 1 3/4 in. deep (91 mm high, 171 mm wide, 44 mm deep)

Setting Temperature Range: 42 F to 88 F (6 C to 31 C)

Electrical Ratings: 24 to 30 Vac (15 Vac min.)

Programmability: 1 DAY PROGRAM

Changeover: Manual

Humidity Ratings: 5 to 95% RH, non-condensing

Currents, Heating: 0.02A to 1.5A running

Currents, Cooling: 0.02A to 1.5A running

Currents, Fan: 0.02A to 0.5A running

Sensor Element: Coiled Bi-metal

Accessories:

191108AJ Wallplate, for directly powering the clock

193121A Beige Coverplate Assembly includes adapter ring, wall cover plate and screws.

CONSUMER BENEFITS

- Proven reliability and performance provide comfort with energy savings.
- Energy savings with winter setback and summer setup.
- Multiple setback or setup periods can be programmed, providing three or more temperature changes per day. Easy-to-use programming.
- Thermostat is easily programmed by placing color-coded pins in clock program dial.
- Program pins, program indicator, and temperature setting levers are color-coded for easy recognition.
- Program advance button allows temporary overriding current program without reprogramming (select models only).
- Program status indicator on cover of clock models shows whether system is in comfort or in energy savings mode.

INSTALLER BENEFITS

- The choice for professional technicians.
- Universal replacement for any installation except millivoltage. When used with a Super Tradeline Q682B Subbase, these thermostats can be wired for system power, 24-volt or battery only; powering method is field-selectable. Use as a replacement for a T8082A or T8085A Thermostat on an existing Q682 Subbase. Clock/timer is automatically wired the same as the original thermostat without rewiring the subbase.
- Models date coded after 9427 can be field-calibrated.
- T8090A1056 available with jumper for steam applications.
- Terminal barriers on wallplate and subbase permit straight-in or conventional wraparound wiring connections.
- Add Q682 Subbase for system and fan switching in heating-cooling systems.

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

4074EPP Program Pins Assembly. Includes two high temperature (red) program pins and two low temperature (blue) program pins for T8090, T8190, T8095 and TS8095.

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

209652A Beige Universal Cover Plate, 7 -/8 in. (187 mm) x 5 -3/4 in. (146 mm) including screws and adapter plate.

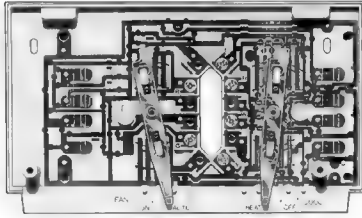
209653A Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Gray including screws and adapter plate.

TG512A1009 Large Universal Thermostat Guard with clear cover and base, and opaque wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

	Product Number	Application	Color	Mounting	Switch Position	Terminal Designations	Stages	Includes
•	T8090A1007	Electric (Conventional), Oil, Gas	Beige	Horizontal	None, use Q682 for switching	R,W,C,C,Y (unmarked)	1 Heat/1 Cool	191108AJ wallplate
•	T8090A1023	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	None, use Q682 for switching	R,W,C,C,Y (unmarked)	1 Heat/1 Cool	191108AJ wallplate
*	T8090A1056	Steam, Electric (Conventional), Oil, Gas	Beige	Horizontal	None, use Q682 for switching	R,W,C,C,Y (unmarked)	1 Heat/1 Cool	191108AJ wallplate and Jumper for steam applications
	T8095A1002	24 Vac cooling-only systems 24 Vac heating-only systems	Beige	Horizontal	None, use Q682 for switching	R, W, C, C, Y (unmarked)	—	191108AJ wallplate
	T8190A1006	Electric (Conventional), Oil, Gas	Beige	Horizontal	None, use Q682 for switching	R,W,C,C,Y (unmarked)	1 Heat/1 Cool	191108AJ wallplate
	TS8095A1010	750 mV heating-only systems.	Beige	Horizontal	None, use Q682 for switching	R, W, C, C, Y (unmarked)	—	191108AC wallplate and Jumper for steam applications

* TRADELINE models • SUPER TRADELINE models

Q682 Thermostat Subbases



Provide system and fan switching and mounting base for T8090, T8095, TS8095 and T8190 Chronotherm® Thermostats in heating-cooling systems.

- Mount directly on wall or on horizontal outlet box.

Application: With Rc and Rh terminals for isolated heating and cooling circuits.

Dimensions, Approximate: 4 in. high, 6 3/4 in. wide, 7/8 in. deep. (102 mm high, 172 mm wide, 22 mm deep.)

Electrical Ratings: 7.5A inrush at 27 Vac.

	Product Number	Color	Switch Position		Terminal Designations	Comments
			System	Fan		
*	Q682B1011	Beige	COOL-OFF-HEAT	ON-AUTO	C,C,Rh,Rc,G,W,Y	Use with T8095A for 24V powered clock. Use with T8090A or T8191A for battery, system or transformer powered clock.
•	Q682B1201	Beige	COOL-OFF-HEAT	ON-AUTO	C,C,Rc,Rh,B,O,G,W,Y	Use with T8095A for 24V powered clock. Use with T8090A or T8191A for battery, system or transformer powered clock.
•	Q682B1219	Gray; use with Premier White Thermostat.	COOL-OFF-HEAT	ON-AUTO	C,C,Rc,Rh,B,O,G,W,Y	Use with T8095A for 24V powered clock. Use with T8090A or T8191A for battery, system or transformer powered clock.
* TRADELINE models • SUPER TRADELINE models						

Thermostats—Additional Equipment

S483 Winter Watchman



Used as a freeze warning device. Completes circuit to household lamp on temperature fall, indicating inoperative heating equipment.

- Plugs directly into wall outlet.
- Lamp plugs into receptacle at bottom of Winter Watchman device.
- Useful when house is unoccupied to notify a neighbor of a temperature drop so heating source fault can be rectified before freeze-up occurs.
- Not precision calibrated for use as a thermostat.

Dimensions, Approximate: 3-3/8 in. (86 mm) high, 2-1/8 in. (54 mm) wide, 13/16 in. (21mm) deep

Operating Temperature Range: 30 F to 60 F (-1 C to 16 C)

Electrical Ratings: Load: 120W maximum for incandescent lamp load only.

Frequency: 60 Hz

Accuracy: 5 F (3 C)

Heating Current: 1.0A

Sensor Element: Bimetal

Product Number	Color	Mounting	Switching Action	Setting Temperature Range	
				(F)	(C)
S483B1002	Beige	Vertical Mounting	SPST	30 F to 60 F	-1 C to 16 C
* TRADELINE models • SUPER TRADELINE models					

C8600 Carbon Monoxide Alarm



Residential Carbon Monoxide Alarm with the most reliable detection technology available.

- The only biotechnology-based infrared-gas sensor that mimics the human response to carbon monoxide.
- Detects low levels of carbon monoxide (70 parts per million).
- Detects toxic CO gas resulting from incomplete combustion such as emitted from appliances, furnaces, fireplaces and auto exhaust.
- Quick recovery—Rapidly returns to its original state when carbon monoxide is eliminated from the environment.
- Every unit is 100% gas-tested to ensure accurate, timely response.
- Microprocessor intelligence—Self-tests every 10 minutes.
- Supervises sensor and alarm circuit status to ensure protection.
- Easy to install—no wiring, battery operation lets you locate the unit almost anywhere.
- Energy easing design extends battery life to more than one year under normal use.
- Low battery warning, chirps, and LED double flashes.
- Test/Retest button.

Dimensions, Approximate: 4 3/4 in. diameter, 1 1/2 in. high (121 mm diameter, 38 mm high)

Mounting: Ceiling Mounted, Wall mounted

Approvals:

Underwriters Laboratories, Inc: 2034 Standard, c-UL Standard

Product Number	Color	LEDs	Includes
* C8600A1000	Premier White®	Status and Diagnostic	9 volt alkaline battery
* TRADELINE models • SUPER TRADELINE models			

Programmable and Non-Programmable Thermostat Parts and Accessories

Product Number	Used With	Description
104456B	T87	Two terminal heating-only wallplate for T87F
104994A	T87, T8090, T8095, T8190 after date code 9427.	Calibration wrench.
137421AE	T87	Taupe wallplate assembly with positive off.
137421K	T87	Taupe wallplate assembly without positive off.
137421R	T87	White Wallplate
191108AJ	T8090, T8095, T8190	Wallplate, for directly powering the clock
193121A	Chronotherm III T8600, T8601, T8602, T8603, T8611, T8621, T8624; T874 with Q674, T8195, T8090, T8082, T834, T822	Beige coverplate assembly includes adapter ring & wall cover plate.
193121B	T874 with Q674, T8195, T8090, T8082, T834, T822	Taupe coverplate assembly includes adapter ring & wall cover plate.
194559R	T874	T874 Locking Cover & Lever Assembly with thermometer.
194559S	T874	T874 Locking Cover & Lever Assembly without thermometer.
196393A	Chronotherm III T8600, T8601, T8602, T8603, T8611, T8621, T8624; T8082, T8085	Cover plate (beige) to cover marks left by old thermostat.
198170A	T87	T87 Designer Beige 6 in. decorator cover ring with adaptor plate.
198172	T87	Cover ring for T87 Designer beige models.
199933	T87	Cover ring for T87 Taupe models.
201206B	T8600Chronotherm III T8600, T8601, T8602, T8603, T8611, T8621, T8624	Chronotherm III Replacement Door; Premiere White
202427	T87	White cover ring for T87.
202687A	T87	Premier White Adapter Kit includes 6 in. cover ring, adapter ring and screws for mounting T87F/Q539 on outlet box or to cover mounting marks from old thermostat.
202689A	Chronotherm III T8600, T8601, T8602, T8603, T8611, T8621, T8624; C7189, T874 with Q674, T8195, T8090, T8082, T834, T822	Gray coverplate assembly includes adapter ring & wall cover plate.
202808A	T8090, T8095	Cover Assembly, replacement cover, Premier White
202905AA	Chronotherm III T8611, T8621	Replacement remote temperature sensor for Chronotherm III, beige
202905CA	Chronotherm III T8611, T8621	Replacement remote temperature sensor for Chronotherm III, premier white
203255AA	T8131, T8132, T8112D	Taupe Replacement Flip-up Door with buttons
203534A	T87	ADAPTER PLATE
205224A	PC8900, T8131, T8132, T8112	Wall Cover Plate; Premier White. Covers marks left by old thermostat.
206391AA	T8131, T8132, T8112D	Replacement Battery Door, Premier White
206658AA	T8131, T8132, T8112D	Premier White Replacement Flip-up Door with buttons
207396A	Chronotherm IV T8600, T8601, T8602, T8611, T8624	Replacement Door for Chronotherm IV, taupe
207396B	Chronotherm IV T8600, T8601, T8602, T8611, T8624	Replacement Door for Chronotherm IV, Premier White
209632	T8400, T8401	Bracket used to mount decorator coverplate to 2 in. by 4 in. outlet box.
209634A	T8400, T8401	Decorator Cover Plate, 3 7/8 in. (98 mm) x 3 7/8 in. (98 mm); taupe
209634B	T8400, T8401	Decorator Cover Plate, 3 7/8 in. (98 mm) x 3 7/8 in. (98 mm); Premier White
209635A	T8400, T8401	Decorator Cover Plate, 5 3/4 in. (146 mm) x 5 3/4 in. (146 mm); taupe
209635B	T8400, T8401	Decorator Cover Plate, 5 3/4 in. (146 mm) x 5 3/4 in. (146 mm); Premier White
209649A	Chronotherm IV T8600, T8601, T8602, T8611, T8624, T810, T822, T834, T841, T874, T800, T8001, T8011, T8024, T8090, T8095, T8190, T8195, T8196, T8411, T8424, T8501, T8511, T8524, T8635, T8665, TS8095	Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Taupe
209650A	Chronotherm IV T8600, T8601, T8602, T8611, T8624, T810, T822, T834, T841, T874, T800, T8001, T8011, T8024, T8090, T8095, T8190, T8195, T8196, T8411, T8424, T8501, T8511, T8524, T8635, T8665, TS8095	Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Premier White

Thermostats—Parts and Accessories

Product Number	Used With	Description
209652A	Chronotherm IV T8600, T8601, T8602, T8611, T8624, T810, T822, T834, T841, T874, T800, T8001, T8011, T8024, T8090, T8095, T8190, T8195, T8196, T8411, T8424, T8501, T8511, T8524, T8635, T8665, TS8095	Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Beige
209653A	Chronotherm IV T8600, T8601, T8602, T8611, T8624, T810, T822, T834, T841, T874, T800, T8001, T8011, T8024, T8090, T8095, T8190, T8195, T8196, T8411, T8424, T8501, T8511, T8524, T8635, T8665, TS8095	Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Gray
220529A	Chronotherm III T8600, T8601, T8602, T8603, T8611, T8621, T8624	Beige Chronotherm III replacement door.
220985B	T8082, T8182	Battery replacement kit.
221886A	T87 EASY TO SEE models.	EASY-TO-SEE Clear ring.
272804A	T410, T498, T4398	Range Stop and Locking Screw Assembly.
272823	T498A,B with a date code after 9345	Blind locking cover assembly.
32004796-001	PC8900	PC8900 Door
32005439-001	T87	Taupe Adapter Kit includes 6 in. cover ring, adapter ring and screws for mounting T87F/Q539 on outlet box or to cover mounting marks from old thermostat.
4074DAY	T8082, T8085, T8182, T8185, TS8085	Program Pins Assembly. Includes two high temperature (red) program pins, and two low temperature (blue) program pins.
4074ECK	T874	Locking Lever Stops for T874.
4074EDS	TG504	Key and clear Lens
4074EPP	T8090, T8095, T8190, T8195, TS8095, Y8095, Y8224	Program Pins Assembly. Includes two high temperature (red) program pins, and two low temperature (blue) program pins.
4074FAB	T8600 2000 Series, T8000, T8400, T8775	Shunt Resistor bag assembly for use with Powerstealing Electronic Thermostats
50000066-001	The Digital Round T8775	Decorative Cover Plate Replacement Cover
C815A1005	T874	Outdoor Thermistor

Tamper-Proof Protection for Commercial Buildings, Institutional Buildings and other High-Traffic Areas

Honeywell Thermostat Guards Protect Your Investment...

- in high-quality equipment
- in energy savings
- in building comfort

Honeywell Thermostat Guards offer a low-cost way to protect your bottom line. They prevent tampering, which can damage thermostats or affect proper heating/cooling system performance.

Controlling building expenses is an important way to control your bottom line. That's why you invest in quality equipment—and select the most practical cycling patterns to save energy and maintain resident comfort. Why let a tamperer control your bottom line?

Honeywell Thermostat Guards... Your Best Choice

- Easily install in seconds.
- Lock in place, covering set point levers and system switches.
- Come equipped with heavy-duty key locks.

HVAC Dealers and Contractors:

- You can help building owners/managers control costs.
- Use a Honeywell thermostat guard with every thermostat installed in a public area.
- Replace damaged guards.
- Look for other problems:
 - Damage to thermostats
 - Obstructions near thermostats
 - Changes in geography
 - Changes in occupancy

- Replace old or damaged thermostats.
- Upgrade standard or economy thermostats to energy saving, programmable, or enhanced feature models.

Honeywell thermostat guards are unobtrusive and attractive, blending into the decor. Each is designed to provide proper airflow around the thermostat for optimum performance.

Honeywell thermostat guards are designed to work with many different thermostats. The following Thermostat Guard Reference Table is for your convenience when choosing the thermostat guard for your application.

Thermostat Guard Reference Table

Thermostat	Versaguard™ Universal Thermostat Guards				Custom Key Lock® Thermostat Guards		
	TG509	TG510	TG511	TG512	TG587	TG504	TG586
PC8900				Yes			
T87/Q539		Yes ^a			Yes		
T410			Yes				
T451			Yes				
T498			Yes				
T4700			Yes				
T631				Yes			
T641			Yes				
T651			Yes				
T694			Yes				
T810			Yes				
T812		Yes					
T822			Yes ^b				
T827			Yes				
T834			Yes ^b				
T841		Yes					
T874/Q674			Yes ^a			Yes	
T4039			Yes				
T4098			Yes				
T4398			Yes				
T4600			Yes				
T4798			Yes				
T4800			Yes				
T6051A			Yes				
T6052			Yes				
T7047			Yes				
T7660	Yes						
T8034			Yes				
T42				Yes			

^a Use TG512 with thermostat that has dealer logo wallplate.
^b Turn TG511 90 degrees to fit thermostat with dealer logo wallplate.

Thermostat	Versaguard™ Universal Thermostat Guards				Custom Key Lock® Thermostat Guards		
	TG509	TG510	TG511	TG512	TG587	TG504	TG586
T92				Yes			
T921				Yes			
T7200				Yes			
T7300/Q7300				Yes			
T7400				Yes			
T8000			Yes				
T8001			Yes				
T8002				Yes			
T8011			Yes				
T8024			Yes				
T8082/Q682				Yes			
T8085/Q682				Yes			
T8090/Q682				Yes			
T8112				Yes			
T8131				Yes			
T8132				Yes			
T8195/Q682				Yes			
T8400		Yes					
T8401		Yes					
T8411			Yes				
T8424			Yes				
T8501			Yes				
T8511			Yes				
T8524			Yes				
T8600				Yes			
T8601				Yes			
T8602				Yes			
T8611				Yes			
T8624				Yes			
T8635				Yes			

^a Use TG512 with thermostat that has dealer logo wallplate.
^b Turn TG511 90 degrees to fit thermostat with dealer logo wallplate.

Thermostat Guards

Thermostat	Versaguard™ Universal Thermostat Guards				Custom Key Lock® Thermostat Guards		
	TG509	TG510	TG511	TG512	TG587	TG504	TG586
T8665				Yes			
T8700			Yes				
T8775		Yes					
W884				Yes			
TP9600 Series	Yes						
TP970	Yes	Yes					
TP971	Yes						
TP972	Yes						
TP973	Yes						
TP974	Yes						

^a Use TG512 with thermostat that has dealer logo wallplate.
^b Turn TG511 90 degrees to fit thermostat with dealer logo wallplate.

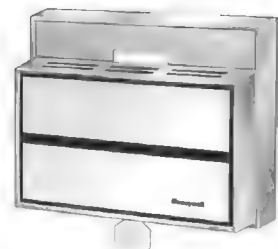
Versaguard™ Universal Thermostat Guards. . . to protect any Commercial Thermostat

Honeywell Versaguard Universal Thermostat Guards are designed to cover a wide variety of thermostats. Choose clear plastic covers to allow display of temperature and settings, or opaque covers to completely hide the unit.

One tough guard . . .

Bend it, twist it, smack it or otherwise abuse a Honeywell Versaguard Universal Thermostat Guard and it just keeps on protecting the thermostat inside. These tough guards are designed to prevent individuals from "fiddling" with temperature settings and prevent thermostat damage in high impact areas. All exceed specifications for the Underwriters Laboratories Inc. "pry test" (UL873 54.1B), which requires that the guard remain closed upon a direct pull of 14 pounds in an attempt to pry off the cover. And all guards and their contents handily survive the UL87354.1C impact test, where a 2-in. diameter steel ball is dropped on the cover applying a minimum 1 foot-pound force.

TG504 Key Lock® Covers for T874 Thermostats



Protect T874 Thermostats and Q674 Subbases, and Y594 Thermostat/Subbase packages against damage and hinder tampering with thermostat settings and subbase switches.

- Easy-to-install Key Lock Cover replaces thermostat cover without removal or adjustment of thermostat.
- No screws or mounting accessories required.
- Ideal for office areas, lobbies, stores, restaurants, clinics and other areas where protection of T874/Q674 is needed.
- Rugged molded plastic cover allows good airflow for correct system performance.

Outside Dimensions: 4 7/16 in. high, 6 1/16 in. wide, 2 1/8 in. deep
 (189 mm high, 154 mm wide, 54 mm deep)

Operating Temperature Range: 55 F to 95 F (13 C to 35 C)

Accessories:

195980A Replacement Keys (set of 2) for TG504 and TG586
4074EDS Key and Clear Lens (for viewing LED's) for TG504.

Product Number	Color	Product Used With	Description	Includes
TG504A1025	Beige matte	T874/Q674 Only	T874 Thermostat Guard	Tumbler lock, one key, and internal thermometer (reads right to left).
TG504A1033	Beige matte	T874/Q674 Only	T874 Thermostat Guard	Tumbler lock, one key, internal and external thermometer.

* TRADELINE models • SUPER TRADELINE models

TG509 Versaguard Universal Thermostat Guards



Outside Dimensions: 5 1/2 in. high, 3 5/8 in. wide, 2 1/8 in. deep (140 mm high, 92 mm wide, 54 mm deep)

Inside Dimensions: 4 in. high, 2 7/8 in. wide (102 mm high, 73 mm wide)

Enclose and protect wall thermostats against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Constructed of opaque or clear polystyrene.
- Includes opaque polystyrene wallplate, ring base, guard cover, tumbler lock, two keys and optional Honeywell logo insert.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Accessories:

191990A Replacement Keys (set of 2) for TG509, TG510, TG511 and TG512

Product Number	Color	Ring Base Color	Product Used With	Description
TG509F1003	Smoke colored	transparent	T7660, TP9600 Series, TP970, TP971, TP972, TP973, TP974, Others	Mini smoke colored thermostat guard
TG509G1001	Opaque polycarbonate	opaque polycarbonate	T7660, TP9600 Series, TP970, TP971, TP972, TP973, TP974, Others	Mini opaque Thermostat Guard

* TRADELINE models • SUPER TRADELINE models

TG510 Versaguard Universal Thermostat Guards



Outside Dimensions: 5 7/8 in. high, 5 7/8 in. wide, 2 1/2 in. deep (149 mm high, 149 mm wide, 64 mm deep)

Inside Dimensions: 4 7/16 in. high, 4 7/16 in. wide, (113 mm high, 113 mm wide)

Enclose and protect wall thermostats against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Constructed of opaque polystyrene, clear acrylic, or beige painted steel.
- Includes opaque polystyrene wallplate, ring base, guard cover, tumbler lock, two keys and optional Honeywell logo insert.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Accessories:

191990A Replacement Keys (set of 2) for TG509, TG510, TG511 and TG512

Product Number	Color	Ring Base Color	Wallplate Color	Product Used With	Description
* TG510A1001	Clear Acrylic	clear acrylic	Opaque Polystyrene	T87/Q539, TP970 Family, Others of similar size	Small clear acrylic Thermostat Guard
* TG510B1009	Opaque polystyrene	opaque polystyrene	Opaque Polystyrene	T87/Q539, TP970 Family, Others of similar size	Small opaque Thermostat Guard
TG510D1005	Painted metal	opaque polystyrene	Opaque Polystyrene	T87/Q539, TP970 Family, Others of similar size	Small painted metal Thermostat Guard

* TRADELINE models • SUPER TRADELINE models

Thermostat Guards

TG511 Versaguard Universal Thermostat Guards



Enclose and protect wall thermostats against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Constructed of opaque polystyrene, clear acrylic, or beige painted steel.
- Includes opaque polystyrene wallplate, ring base, guard cover, tumbler lock, two keys and optional Honeywell logo insert.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.

Outside Dimensions: 6 1/2 in. high, 7 1/2 in. wide, 2 15/16 in. deep
(165 mm high, 91 mm wide, 75 mm deep)

Inside Dimensions: 5 1/16 in. high, 6 1/16 in. wide
(129 mm high, 154 mm wide)

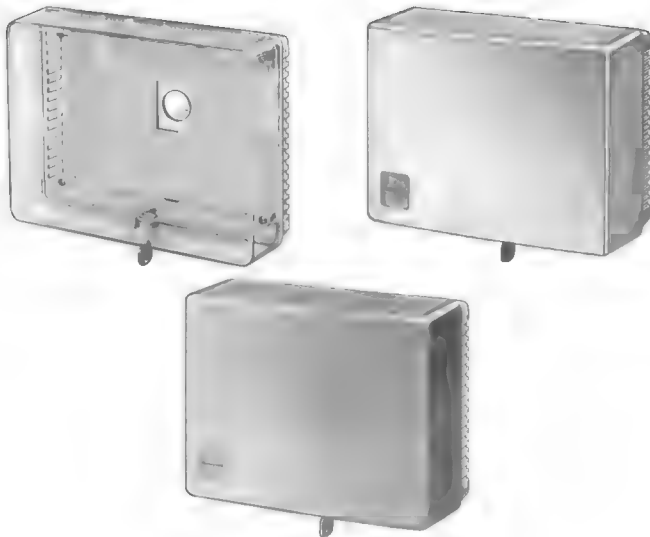
Accessories:

191990A Replacement Keys (set of 2) for TG509, TG510, TG511 and TG512

Product Number	Color	Ring Base Color	Wallplate Color	Product Used With	Description
TG511A1000	Clear Acrylic	clear acrylic	Opaque Polystyrene	T874/Q674, Others of similar size	Medium clear acrylic Thermostat Guard
TG511B1008	Opaque polystyrene	opaque polystyrene	Opaque Polystyrene	T874/Q674, Others of similar size	Medium opaque Thermostat Guard
TG511D1004	Painted metal	opaque polystyrene	Opaque Polystyrene	T874/Q674, Others of similar size	Medium painted metal Thermostat Guard

* TRADELINE models • SUPER TRADELINE models

TG512 Versaguard Universal Thermostat Guards



Enclose and protect wall thermostats against tampering, damage and unauthorized adjustment of thermostat settings.

- Unique double-wall construction provides extra measure of tamper-resistance.
- Used in both new and existing applications.
- Constructed of opaque polystyrene, clear acrylic, or beige painted steel.
- Includes opaque polystyrene wallplate, ring base, guard cover, tumbler lock, two keys and optional Honeywell logo insert.
- Tamper-resistant lock; key cannot be removed unless in locked position.
- All models mount vertically or horizontally on wall or exposed junction box.
- Vents in guard base allow airflow for optimum thermostat performance.
- TG512A1058 Cover has a hole for access to up and down keys on thermostat.

Outside Dimensions: 7 1/4 in. high, 9 3/4 in. wide, 3 3/8 in. deep
(184 mm high, 248 mm wide, 86 mm deep)

Inside Dimensions: 5 7/8 in. high, 8 3/8 in. wide
(149 mm high, 213 mm wide)

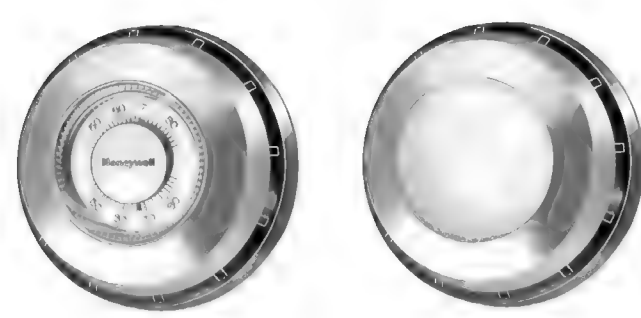
Accessories:

191990A Replacement Keys (set of 2) for TG509, TG510, TG511 and TG512

Product Number	Color	Ring Base Color	Wallplate Color	Product Used With	Description
TG512A1009	Clear Acrylic	clear plastic	Opaque Polystyrene	T8600, T8090, Others of similar size	Large clear acrylic Thermostat Guard
TG512A1058	Clear Acrylic	clear plastic	Opaque Plastic	T8600, T8090, Others of similar size	Large clear acrylic Thermostat Guard
TG512B1007	Opaque polystyrene	opaque polystyrene	Opaque Polystyrene	T8600, T8090, Others of similar size	Large opaque Thermostat Guard
TG512D1003	Painted metal	opaque polystyrene	Opaque Polystyrene	T8600, T8090, Others of similar size	Large painted metal Thermostat Guard

* TRADELINE models • SUPER TRADELINE models

TG587 Thermostat Guard



Protects T87F thermostats and subbases against tampering, damage and unauthorized adjustment of settings.

- Helps maintain desired settings for energy savings and top system performance.
- Black and satin chrome finish complements any interior decor.
- Thermostat must be mounted on Q539 subbase or three terminal wallplate.
- Includes cover, guard ring and two keys.
- Requires key for removal.

Outside Dimensions: 2 in deep, 4 1/32 in. diameter wide
(51 mm deep, 102 mm diameter wide)

Accessories:

4074CAS Keys (set of 2) for TG587, T87F2998/3004 Key Lock Guards.

190877A Cover replacement with window

190877B Cover replacement without window

Product Number	Color	Product Used With	Description	Includes
TG587F1008	Black with Satin chrome	T87/Q539 Only	T87 Thermostat Guard with window	Key Lock cover with Window.
TG587F1016	Black with Satin chrome	T87/Q539 Only	T87 Thermostat Guard without window	Key Lock cover without window.

* TRADELINE models • SUPER TRADELINE models

Thermostat Guard Parts

Product Number	Product Used With	Description
191990A	TG509, TG510, TG511, TG512	Replacement Keys (set of 2) for TG509, TG510, TG511 & TG512
194560A	TG501	Replacement Keys (set of 2) for TG501
195980A	TG504, TG586	Replacement Keys (set of 2) for TG504 & TG586
4074CAS	TG587	Keys (set of 2) for TG587, T87F2998/3004 Key Lock Guards.
4074EDS	TG504	Key and Clear Lens (for viewing LED's) for TG504.

Communicating Thermostats

T8635 Microelectronic Communicating Programmable Thermostat



Use up to three thermostats with required W8635A,B EIM and optional W8703A Damper Interface Module.

- Seven-day programmable.
- Programmable fan.
- On-demand/continuous backlight display.
- Filter indication timer.
- One-touch Daylight Savings Time key.

Dimensions, Approximate: 3 3/4 in. high, 6 1/16 in. long x 1 9/16 in. deep (95.3 mm high, 154 mm long, 39.7 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: (Heat) 40 F to 90 F (Cool) 45 F to 99F ((Heat) 4.5 C to 32 C (Cool) 7 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Interstage Differential Temperature: 1 to 1.5 F (0.45 to 0.8 C)

Changeover: Auto or Manual

Electrical Ratings: 18 to 30 Vac

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: Horizontal

Network Zoning: Yes

Programmability: 7 DAY

Power Method: Hardwired

Sensor Element: NTC thermistor

Compatible with:

Discharge Air Temperature Sensor: Yes

Required Accessories: W8635A EIM for up to 2H/2C conventional systems.

W8635B EIM for up to 2H/1C heat pump systems.

Optional Accessories: C7089B Outdoor Temperature Sensor for outdoor temperature display.

W8703A Damper Interface Module for up to three zones of control.

	Product Number	Application	Color	Stages	Zones	Switch Position		Terminal Designations	Heat Pump Compatible	Individual Zone Fan Control
						System	Fan			
*	T8635L1013	Gas, Oil, Electric (Conventional), Single Stage, Multistage Heat Pump Thermostat	Premier White®	Staging controlled by W8635	Single- or Multi-Zone	HEAT-OFF-COOL-AUTO-EM. HT.	AUTO-ON	1, 2, 3, OT, OT	Yes	Yes

* TRADELINE models • SUPER TRADELINE models

C7835 Discharge Air Temperature Sensor



Duct-mounted temperature probe used to provide capacity control of heating and cooling equipment. Used with Honeywell Network Zoning System and single unit zone applications.

- When mounted in supply air duct, DATS senses delivered air temperature and cuts off heating or cooling when delivered air temperature goes above or below normal operating limits.
- Compares discharge air temperature to room air temperature and when out-of-tolerance, issues alert to W8735B.
- Requires three wires. Uses standard 18-22 gauge thermostat wire.

Dimensions, Approximate: 3-7/8 in. high, 4 1/8 in. wide, 4 in. deep (77 mm high, 105 mm wide, 102 mm deep)

Ambient Temperature Range: -40 F to +170 F (-40 C to +77 C)

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 90% RH at 95 F non-condensing

Mounting: Duct Mounted

Network Zoning: Yes

Power Method: Hardwired

	Product Number	Application	Heat Pump Compatible	Description
*	C7835A1009	Sensor	Yes	Communicating Discharge Air Temperature Sensor

* TRADELINE models • SUPER TRADELINE models

W8635 Equipment Interface Module



Honeywell

Proud Partner



W8635A,B Equipment Interface Module provides 24 Vac control of single- or multi-stage HVAC equipment when used with a T8635L Microelectronic Communicating Thermostat. The W8635A works with up to 2 heat/2 cool conventional applications. The W8635B works with up to 2 heat/1 cool heat pump applications.

- W8635A controls conventional gas, oil or electric heat systems.
- W8635B controls single-stage or multi-stage heat pumps.
- Uses Honeywell EnviraCom™ communications protocol.

Dimensions, Approximate: 4 3/4 in. high, 4 3/16 in. wide, 1 1/4 in. deep (121 mm high, 107 mm wide, 32 mm deep)

Ambient Temperature Range: -40 F to +150 F (-40 C to +66 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5 to 90% RH, non-condensing

Mounting: No. 6 screw and wall anchors supplied in bag assembly

Network Zoning: Yes

Compatible with:

Discharge Air Temperature Sensor: Yes

Product Number	Application	Color	Stages	Zones	Switch Position	Terminal Designations	Heat Pump Compatible	Individual Zone Fan Control
					System			
* W8635A1006	Controls gas, oil or electric heat conventional systems	Gray	Up to 2 Heat/2 Cool	Single- or Multi-Zone	HEAT-OFF-COOL-AUTO	1, 2, 3, C, R, Rh, Rc, G, W1, W2, Y1, Y2	No	Yes
* W8635B1004	Controls single-stage or multi-stage heat pumps	Gray	Up to 2 Heat/1Cool	Single- or Multi-Zone	HEAT-OFF-COOL-AUTO-EM. HT.	1, 2, 3, C, R, Rh, L, G, W1, Y1, Aux, E, O, B	Yes	Yes

* TRADELINE models • SUPER TRADELINE models

W8703 Damper Interface Module



Honeywell

Proud Partner



The W8703A Damper Interface Module (DIM) controls up to three zones when used with T8635L Microelectronic Communicating Programmable Thermostats and the W8635 Equipment Interface Module (EIM).

- Use with up to three T8635L Microelectronic Communicating Programmable Thermostats and a W8635A,B EIM to enable the following features:
- Time synchronization.
- Shared Filter indication.
- Outdoor temperature display in all zones with only one C7089B Outdoor Temperature Sensor connected.
- Vacation Hold in all zones.
- Check LED in all zones (with W8635B Equipment Interface Module for heat pumps).
- System switch setting automatically changes in all zones.
- Individual fan control in each zone.

Dimensions, Approximate: 4 3/4 in. high, 4 3/16 in. wide, 1 1/4 in. deep (121 mm high, 107 mm wide, 32 mm deep)

Ambient Temperature Range: -40 F to +150 F (-40 C to +66 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: No. 6 screw and wall anchors supplied in bag assembly

Network Zoning: Yes

Approvals:

Federal Communications Commission: FCC: Class B

Product Number	Application	Color	Zones	Heat Pump Compatible	Individual Zone Fan Control
* W8703A1003	Damper Interface Module	Gray	Up to three zones when used with T8635L Communicating Programmable Thermostat and/or Networked Zoning	Yes, use with W8635B	Yes

* TRADELINE models • SUPER TRADELINE models

Communicating Thermostats - Systems

W8735A EnviraCom™ Serial Adapter



The EnviraCom Serial Adapter allows a user to control Honeywell EnviraCom Communicating Thermostats, EnviraZone Systems, and other HVAC products by using any manufacturer's RS-232 compatible home automation control system.

- Use with T8635L Microelectronic Communicable Programmable Thermostat and W8635A or W8635B Equipment Interface Module.
- Can be used with W8735B Telephone Access Module.
- Allows easy integration to host controllers, gateways and computers
- Uses standard DB-9 connector
- Powered through EnviraCom bus; no external power source required
- Uses true RS-232 signals; universally compatible

Dimensions, Approximate: 4.2 in. high, 1.7 in wide, 0.87 in. deep

Ambient Temperature Range: 40F to 125F (4.4C to 51.6C)

Electrical Ratings: 20 to 30 Vac

Frequency: 50 Hz, 60 Hz

Required Accessories: T8635L Microelectronic Communicable Programmable Thermostat

W8635A or W8635B Equipment Interface Module

Optional Accessories: C7089B Outdoor Temperature Sensor

W8703A Damper Interface Module

W8835A EnviraZone Panel

Product Number	Application	Terminal Designations	Used With
W8735A1005	The W8735A EnviraCom Serial Adapter provides local access to an EnviraCom HVAC system through a host computer, gateway, or controller. The host provides the application to control the W8735A and the HVAC equipment.	1,2,3-EnviraCom, RS-232 Serial Port	VICARWORKS™, CRESTRON™, CORACCESS™, PREMISE SYSTEMS™, Personal Computer or other user interfaces.

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W8735B Telephone Access Module



Honeywell

Proud Partner



Dimensions, Approximate: 7-9/16 in. high, 1-5/8 in. wide, 4-1/2 in.

Deep (192 mm high, 41 mm wide, 114 mm deep)

Ambient Temperature Range: 32 F to 125 F (0 C to 49 C)

Electrical Ratings: 24 Vac

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: Application

Approvals:

Federal Communications Commission: FCC rules: Part 68 and Part 15, Subpart J for Class B equipment emissions.

Compatible with:

Discharge Air Temperature Sensor: Yes

Supply Air Sensor: Yes

W8735B Telephone Access Module provides remote telephone access to an HVAC system when used with a PC8900/W8900 or a T8635L Microelectronic Communicating Programmable Thermostat and W8635A or W8635B Equipment Interface Module. The W8735B can be used with conventional or heat pump applications. The W8735B can provide remote access of up to nine zones when used with the W8703A Damper Interface Module(s). When used with C7835A Discharge Temperature Sensor, additional HVAC diagnostics, such as equipment performance monitoring, are available. The W8735B uses EnviraCom™ Network, a low-cost, wired communications protocol.

- Used with T8635L Microelectronic Communicating Programmable Thermostat and W8635A or W8635B Equipment Interface Module.
- Provides remote telephone access to check or change thermostat temperature and system mode.
- Reports an alert message on high or low temperature
- Monitors HVAC system performance, when used with C7835A Discharge Temperature Sensor, and reports on failure.
- Up to three telephone numbers can be programmed for alert messaging.
- Auxiliary sensor input for use with optional NO sensor contact.

Network Zoning: Yes

Required Accessories: T8635L Microelectronic Communicating Programmable Thermostat

W8635A or W8635B Equipment Interface Module

Optional Accessories: 32005208-001 Mounting Bracket

C7089B Outdoor Temperature Sensor

C7835A Discharge Temperature Module

W8703A Damper Interface Module

Accessories:

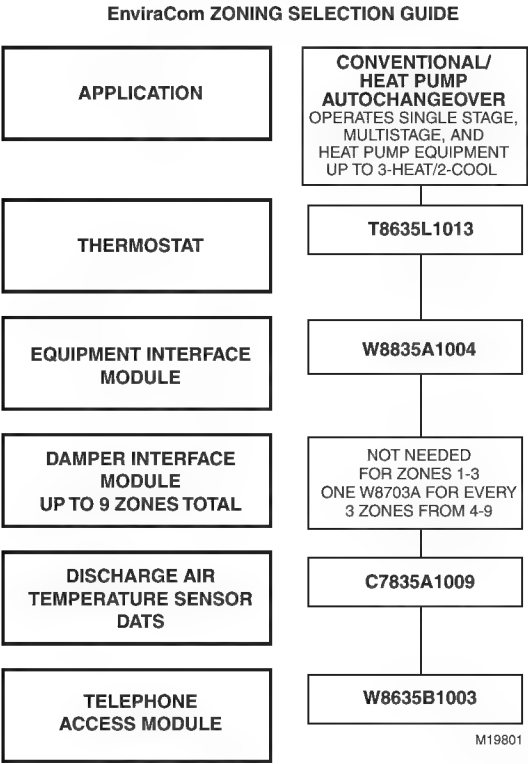
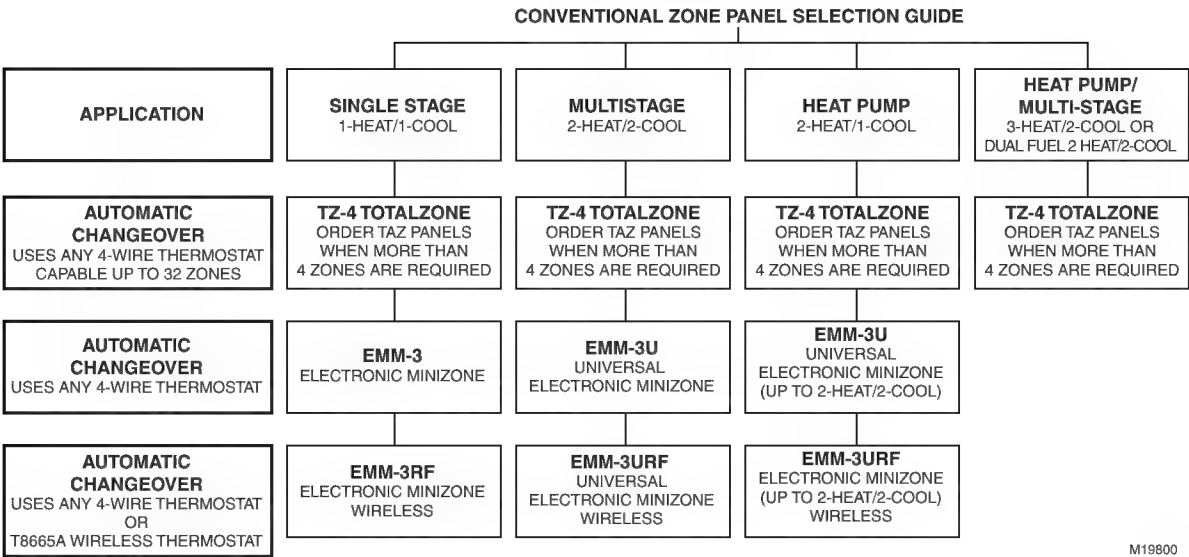
32005208-001 Optional mounting bracket for the W8735B Telephone Access Module

Product Number	Application	Color	Zones	Terminal Designations	Programmability	Heat Pump Compatible
W8735B1003	Remote dial-in access to an HVAC system conventional telephone line.	White and Blue ABS	Remote access up to nine zones when used with W8703A	1, 2, 3, Aux1, Aux2, Ln2, Ln2, Ph1, Ph2, Line in, Phone out	Up to three dial-out numbers, power outage duration, zone names, enable/disable filter alert, and enable/disable dial-out alert.	Yes
* 32005208-001	Optional mounting bracket for the W8735B telephone access module	—	—	—	—	—

* TRADELINE models • SUPER TRADELINE models

Zoning System—Selection Guide

Zoning Control Panel Selection Guide



EMM-3 Electronic MiniZone Panel (1H/1C)



Three-zone panel for single stage heating and cooling applications.

- Uses all Honeywell four-wire thermostats.
- Automatic changeover per zone allows one zone to be in heat while others are in cooling. Twenty-minute timer controls changeover.
- Individual fan control.
- Features:
 - Resettable circuit breaker protects panel
 - Visible LED indicators communicate system starts.
 - Zone Max Sensor for optional capacity protection.

Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With

Individual Zone Fan Control: Yes
Frequency: No
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs
EMM-3	1 Heat/1 Cool	3 Zone	No	No	Yes

* TRADELINE models • SUPER TRADELINE models

EMM-3K Conventional Zoning Kit



EMM-3 Electronic MiniZone Panel Kit controls single-stage heating and cooling equipment and is used on two-and three-zone applications.

Kit includes C7735A Discharge Air Temperature Sensor and an AT140D Transformer.

Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With
Individual Zone Fan Control: Yes
Frequency: No
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Available For	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs	Includes
EMM-3K	1 Heat/1 Cool	three zones	three zones	No	No	Yes	Kit Includes C7735A Discharge Air Temperature Sensor and a AT140D Transformer

* TRADELINE models • SUPER TRADELINE models

Zoning Systems—Control Panels

EMM-3U Universal Electronic MiniZone Panel (2H/2C)



Controls single-stage, multi-stage, conventional or heat pump equipment and is used on two- and three-zone applications.

- Compatible with single-stage, multi-stage, conventional or heat pump applications.
- Select virtually any Honeywell four-wire, single-stage, multi-stage, or Trol-A-Temp heat pump thermostat.
- Optional ZoneMax Sensor or C7735A1000 Discharge Air Temperature Sensor for capacity control.
- System and Zone LEDs indicate system status.
- Automatic zone changeover with 20-minute changeover timer.
- Individual zone fan control.
- Thermal circuit breaker protects panel and transformer from damage if miss-wired.
- Purge timer protects equipment between calls for heating and cooling.
- Uses spring-open/power-closed, spring-closed/power-open, and power-open/power-closed dampers.
- Interfaces with single or dual transformer equipment.
- Replaces MABSEZ Series.

Application: Zoning
Auto Changeover: Yes
Compatible with
Supply Air Sensor: Available With

Individual Zone Fan Control: Yes
Frequency: No
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs
EMM-3U	2 Heat/2 Cool	3 Zone	Yes	Yes	Yes

* TRADELINE models • SUPER TRADELINE models

EMM-3UK Conventional Zoning Kit



The EMM-3U Universal Electronic MiniZone™ Panel controls single-stage, multi-stage, conventional or heat pump heat/cool equipment and is used on two- and three-zone applications.

Kit Includes C7735A Discharge Air Temperature Sensor and a AT140D Transformer.

Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With
Individual Zone Fan Control: Yes
Frequency: No
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Available For	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs	Includes
EMM-3UK	2 Heat/2 Cool	Three zones	Three zones	Yes	Yes	Yes	Kit Includes C7735A Discharge Air Temperature Sensor and a AT140D Transformer

* TRADELINE models • SUPER TRADELINE models

TotalZone® Add-A-Zone (TAZ) Zone Control Panel



Zone panel used to add zones to TZ-4.

- Used with TZ-4 Control Panel to expand number of zones.
- Uses multiple TAZ-4 Control Panels to control up to 32 zones.

Application: Zoning - add a zone panel (4-zone)

Auto Changeover: Yes

Compatible with

Supply Air Sensor: Available With

Individual Zone Fan Control: Yes

Frequency: No

Resettable Fuse: Yes

	Product Number	Stages	Number of Zones	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs
*	TAZ-4	3 Heat/2 Cool	4 Zone	No	Yes	Yes
* TRADELINE models • SUPER TRADELINE models						

TZ-4 TotalZone® Zone Control Panel (3H/2C)



Four-zone panel designed to provide first call changeover from any zone thermostat. For most HVAC systems including single-stage and up to three stages of heating and two stages of cooling and heat pump.

- Four zones at price of three.
- Dual-fuel capacity for add-on heat pump applications.
- Compatible with multi-stage and heat pump thermostats.
- Expandable using TotalZone® Add-A-Zone™ Panels.
- Controls up to 28 zones.

Application: Zoning

Auto Changeover: Yes

Compatible with

Supply Air Sensor: Available With

- Uses any Honeywell four-wire thermostat to control any equipment including T8611G2051 Heat Pump Thermostats and Honeywell Multistage Thermostats.
- Controls additional stages of heating and cooling based on:
 - Time, adjustable from 5 to 30 minutes.
 - Percent of zones calling.
 - Multi-stage or heat pump thermostats.
- Built-in Emergency Heat switch eliminates need for expensive heat pump thermostat on each zone.
- Zone-A-Lone™ allows zone 1 thermostat to set back all zones during unoccupied periods.
- When opposite calls exist, TZ panel services mode calling first and either satisfies call within 20 minutes or drops it and switches over to opposite mode to satisfy that demand.
- When all calls are satisfied, TZ panel allows fan operation from any zone through Fan switch on each thermostat.
 - Setting Fan switch to On from any thermostat turns on fan and closes damper to zones with Fan switches set to Auto.
- Additional features:
 - Resettable circuit breaker protects panel.
 - Visible LED indicators communicate operation.
 - Adjustable stage control timer.
 - Adjustable heating and cooling temperature limits for optional C7735A1000 Discharge Air Temperature Sensor.
 - Adjustable purge timings.
 - Option two transformers for power when many dampers are needed.
- Direct replacement for TZ-3.

Individual Zone Fan Control: Yes

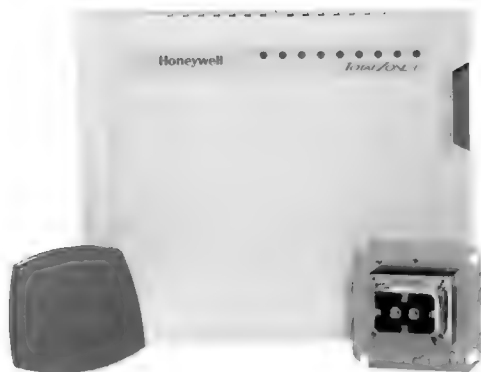
Frequency: No

Resettable Fuse: Yes

	Product Number	Stages	Number of Zones	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs
*	TZ-4	3 Heat/2 Cool	4 Zone, Expandable	Yes	Yes	Yes
* TRADELINE models • SUPER TRADELINE models						

Zoning Systems—Control Panels

TotalZone® TZ-4 System Saver Kit



The TZ-4K TotalZone Zone Control Panel Kit controls single-stage, multi-stage, conventional or heat pump heat/cool equipment. It controls 2, 3 or 4 zones, and is expandable up to 32 zones with optional TotalZone® Add-A-Zone™ Four Zone Control Panel.

Kit Includes C7735A Discharge Air Temperature Sensor and a AT140D Transformer

Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With
Individual Zone Fan Control: Yes
Frequency: No
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Available For	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs	Includes
TZ-4K	3 Heat/2 Cool	four zones	four zones	Yes	No	Yes	Kit Includes C7735A Discharge Air Temperature Sensor and a AT140D Transformer

* TRADELINE models • SUPER TRADELINE models

W8835 EnviraZone™ System (3H/2C)



New advanced zoning control system using the EnviraCom™ communications protocol. The most advanced and easiest to install zoning system in the industry. New control algorithm reduces and regulates plant cycles, decreases damper cycles, and increases efficiency.

- Creates a networked zoning system when combined with three T8635L Microelectronic Communicable Programmable Thermostats.

Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With

- Expandable to nine zones with additional W8703 Damper Interface Modules and Thermostats.
- Compatible with conventional gas, oil, electric or heat pump systems up to 3H/2C.
- Unsurpassed ease-of-wiring with only three wires to connect between devices.
- True communicating system using standard thermostat wire.
- Networked zoning enables these features:
 - Time synchronization.
 - Shared-filter indication.
 - Outdoor temperature display in all zones with only one C7089B Outdoor Temperature Sensor connected.
 - Vacation Hold in all zones.
 - Selectable high and low equipment protection settings.
 - Adjustable stage timing.
 - Adjustable purge timing and damper positions.
 - Expandable up to nine zones with W8703 Damper Interface Module.
 - Single network can use up to nine T8635L Thermostats and two W8703 Damper Interface Modules to control nine zones.
 - Telephone access when used with optional W8735B Telephone Access Modules.
 - Uses Zone of Greatest Demand Intelligence.
 - Allows use of EnviraCom furnace board or traditional furnace boards.
 - Optional use of two transformers for power when many dampers are needed.

Individual Zone Fan Control: Yes
Resettable Fuse: Yes

Product Number	Stages	Number of Zones	Available For	Emergency Heat Switch	Heat Pump Compatible	Indicator LEDs
W8835A1004	3 Heat/2 Cool	Three zones	Expandable to nine zones	Yes	Yes	Yes

* TRADELINE models • SUPER TRADELINE models

EnviraZone System Saver Kits



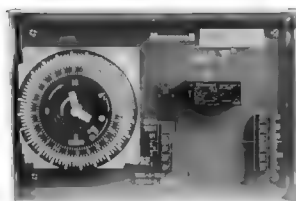
Application: Zoning
Auto Changeover: Yes
Compatible with
Discharge Air Temperature Sensor: Yes
Supply Air Sensor: Available With

Individual Zone Fan Control: Yes
Frequency: Yes
Resettable Fuse: Yes

	Product Number	Stages	Number of Zones	Available For	Heat Pump Compatible	Indicator LEDs	Includes
*	Y8835A1002	3 Heat/2 Cool	2 Zone Kit with 2 T8635L1013	Two or three zones	Yes	Yes	C7835A1009 (1) and AT140D (1)
*	Y8835A1010	3 Heat/2 Cool	3 Zone Kit with 3 T8635L1013	Two or three zones	Yes	Yes	C7835A1009 (1) and AT140D (1)
* TRADELINE models • SUPER TRADELINE models							

Zoning Systems—Control Panels

Timed Make-Up Air Control



24-volt control used to provide programmed intake of outdoor air.

- 24-hour timer can be set in minimum 15-minute intervals.
- Opens motorized damper and turns on HVAC fan to draw in outside air for building circulation.
- Low-voltage contacts activate exhaust fan or auxiliary controls.
- Timer face accessible from control front without opening cover.
- Meets ventilation codes in Washington, Oregon, and Montana.

Application: Timed Make-up Air Control, Timed Ventilation Control
Compatible with

Supply Air Sensor: Available With

Frequency: No

Product Number	Indicator LEDs	Description
TMACII	No	Ventilation Timer
* TRADELINE models • SUPER TRADELINE models		

Timed Ventilation Control



Line voltage control used to provide programmed intake of outdoor air.

- 24-hour timer can be set in minimum 15-minute intervals.
- Opens motorized damper and turns on HVAC fan to draw in outside air for building circulation.
- Line voltage contacts activate exhaust fan or auxiliary control.
- Timer face accessible from control front without opening cover.
- Meets ventilation codes in Washington, Oregon and Montana.
- UL approved.

Application: Timed Ventilation Control




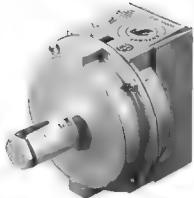
Compatible with

Supply Air Sensor: Available With

Frequency: No

Product Number	Indicator LEDs	Description
TVC	No	Ventilation Timer
* TRADELINE models • SUPER TRADELINE models		

Zone Control Panel—Accessories

	Product Number	Heat Pump Compatible	Indicator LEDs	Description	
*	C7735A1000	Yes	Yes	Discharge Air Temperature Sensor	
	FPC	—	No	Freeze Protection Control.	
	PIRR	—	No	Plug-in Replacement Relay. Can be used as spare or replacement for any plug-in relay on any Mini-zone, older style Mastertrol panel or accessory relay control panel. Four-pole, double-throw, plug-in relay.	
	SPC	—	No	SPC Static Pressure Control. Used to sense supply air static pressure and control MOBD/MARD to maintain a set system pressure.	
* TRADELINE models • SUPER TRADELINE models					

Zoning Systems—Dampers

Automatic Round Damper (ARD)



Voltage (Vac): 24 Vac, 6 VA nominal
Frequency: 60 Hz
Motor Timing: 15 seconds
Motor Type: 2-position

Round damper with 24-volt, spring return damper motor used to control volume of circulating air in heating, cooling, and ventilating systems.

- Galvanized steel.
- Single-blade damper.
- Shipped as power closed/spring return open damper, for use with Honeywell Zoning Systems.
- Can be field-converted to power open/spring return closed damper when used as an independent zone or for fresh air intake.
- Blade closes off tightly against gasket for minimal leakage.
- Rated to operate up to 1 in. wc.
- Available in 5, 6, 7, 8, 9, 10, 12, 14, 16 and 18 in. diameter sizes.

Wires to Motor: 2 wires
Shape: Round
Type: Automatic

Product Number	Size (in.)	Motor Mount	Replacement	Used With
ARD5	5 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD6	6 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD7	7 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD8	8 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD9	9 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD10	10 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD12	12 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD14	14 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD16	16 in.	side or top	Motor: M847D1012	Honeywell zoning systems
ARD18	18 in.	side or top	Motor: M847D1012	Honeywell zoning systems

* TRADELINE models • SUPER TRADELINE models

Economizer Damper

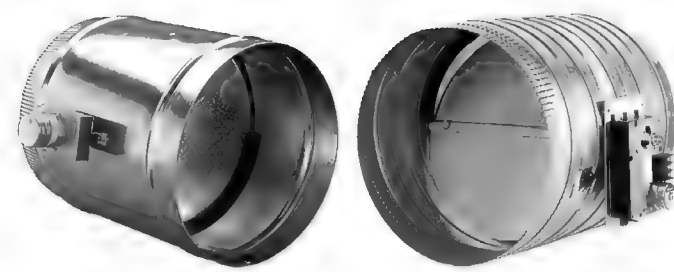
Electrical Connections : Leadwire
Voltage (Vac): 24 Vac, 6 VA nominal
Frequency: 60 Hz
Motor Timing: 30 seconds

Other Motor Information: 60 in. oz. Torque
Wires to Motor: 4 in. lead wire
Shape: Round
Type: Economizer

Product Number	Size (in.)
EARD6	6 in.

* TRADELINE models • SUPER TRADELINE models

Modulating Automatic Round Dampers (MARD)



Single-blade modulating round damper.

- Uses 90-second open to closed motor.
- Can be used as a zone damper.
- ML6161 is replacement motor.
- Available in 5, 6, 7, 8, 9, 10, 12, 14, 16, and 18 in. diameter sizes.

Electrical Connections : Screw

Voltage (Vac): 24 Vac

Frequency: 60 Hz

Motor Timing: 30 seconds

Motor Type: modulating

Wires to Motor: 3 wires

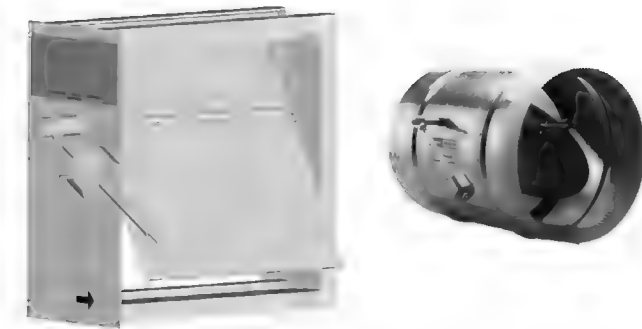
Shape: Round

Type: Modulating

Product Number	Size (in.)	Motor Mount	Replaces
MARD5	5 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD6	6 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD7	7 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD8	8 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD9	9 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD10	10 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD12	12 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD14	14 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD16	16 in.	side	Can be used as a zone damper or bypass damper with SPC
MARD18	18 in.	side	Can be used as a zone damper or bypass damper with SPC

* TRADELINE models • SUPER TRADELINE models

Static Pressure Regulating Damper (SPRD)



Single-blade, steel barometric damper used to bypass excess air when majority of zone dampers are closed.

- Counter-balanced weighted arm to control bypass air for zoned systems.
- Available in rectangular/square and round sizes.
- Air pressure in duct system increases as zone dampers close, pushing the SPRD open automatically.
- Arm and weight both adjustable to control amount of air bypassed.
- Recommended for low pressure systems with less than 0.5 in. wc.
- Additional weights can be ordered separately.
- For larger systems and tighter pressure control, use modulating dampers and static pressure controller (SPC).
- Additional weights order number SPRD-W
- Available in:
 - Round sizes
 - 7, 8, 9, 10, 12, 14 and 16 in. diameters.
 - Rectangular sizes (width x height)
 - 12 x 8, 12 x 10, 12 x 12, 20 x 8, 20 x 10, 20 x 12 in.

Voltage (Vac): no motor

Motor Type: weighted damper arm

Shape: Round

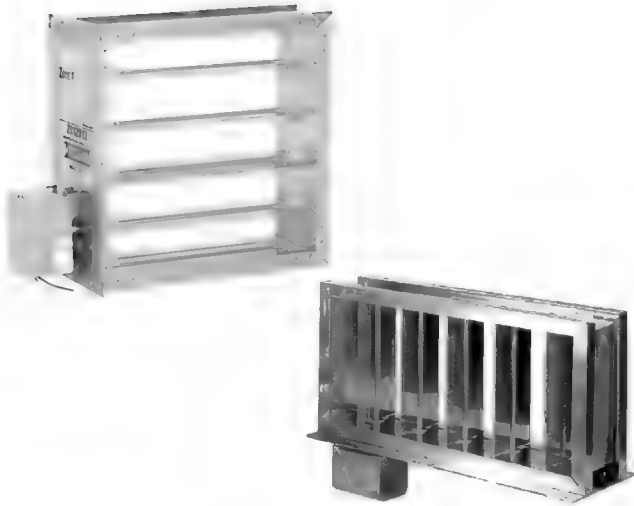
Type: Static Pressure Regulating

Product Number	Size (in.)	Product Number	Size (in.)
SPRD6	6 in.	SPRD12X8	12 in. x 8 in.
SPRD7	7 in.	SPRD12X10	12 in. x 10 in.
SPRD8	8 in.	SPRD12X12	12 in. x 12 in.
SPRD9	9 in.	SPRD20X8	20 in. x 8 in.
SPRD10	10 in.	SPRD20X10	20 in. x 10 in.
SPRD12	12 in.	SPRD20X12	20 in. x 12 in.
SPRD14	14 in.		
SPRD16	16 in.		

* TRADELINE models • SUPER TRADELINE models

Zoning Systems—Dampers

ZD Series Dampers



Electrical Connections : 3 wires
Voltage (Vac): 24 Vac
Frequency: 60 Hz
Motor Timing: 15 seconds
Motor Type: 2-position

24-volt, spring open, power closed damper motor used to control circulating air in heating, cooling, and ventilating systems.

- Kevlar gearing reduces wear, more than doubling damper life.
- Adjustable range stops.
- Mechanical visual position indicator for damper status.
- Solid construction using extruded aluminum frame and blades.
- Parallel blade design for low leakage performance.
- Quieter operation with fewer blades.
- Simple, easy-to-wire, two-wire installation.
- Reliable, strong, 24-volt spring-return motor.
- Fail-safe, normally open operation.
- Compatible with conventional and networked zoning.
- Ordering Instructions:
 - Order ZD (dimension 1) x (dimension 2). (Motor is always mounted on dimension 2 side.)
 - For example, ZD10x8 is a 10 in. x 8 in. damper with the motor on the 8 in. side; but a ZD8x10 is a 8 in. x 10 in. damper that has the motor on the 10 in. side.
 - Note that the damper can be installed in any orientation (mounting side can be on either the bottom or the side of the duct).
- For replacement motor, see Accessories.

Other Motor Information: spring closed

Wires to Motor: 2 wires

Shape: Square, Rectangular

Type: Parallel Blade

Product Number	Size (in.)	Motor Mount	Product Number	Size (in.)	Motor Mount
ZD6X6	6 in. x 6 in.	side	ZD18X6	18 in. x 6 in.	side
ZD6X8	6 in. x 8 in.	bottom	ZD18X8	18 in. x 8 in.	side
ZD6X10	6 in. x 10 in.	bottom	ZD18X10	18 in. x 10 in.	side
ZD6X12	6 in. x 12 in.	bottom	ZD18X12	18 in. x 12 in.	side
ZD6X14	6 in. x 14 in.	bottom	ZD18X14	18 in. x 14 in.	side
ZD6X16	6 in. x 14 in.	bottom	ZD18X16	18 in. x 16 in.	side
ZD6X18	6 in. x 18 in.	bottom	ZD18X18	18 in. x 18 in.	side
ZD6X20	6 in. x 20 in.	bottom	ZD18X20	18 in. x 20 in.	bottom
ZD6X22	6 in. x 22 in.	bottom	ZD18X22	18 in. x 22 in.	bottom
ZD6X24	6 in. x 24 in.	bottom	ZD18X24	18 in. x 24 in.	bottom
ZD6X26	6 in. x 26 in.	bottom	ZD18X26	18 in. x 26 in.	bottom
ZD6X28	6 in. x 28 in.	bottom	ZD18X28	18 in. x 28 in.	bottom
ZD8X6	8 in. x 6 in.	side	ZD20X6	20 in. x 6 in.	side
ZD8X8	8 in. x 8 in.	side	ZD20X8	20 in. x 8 in.	side
ZD8X10	8 in. x 10 in.	bottom	ZD20X10	20 in. x 10 in.	side
ZD8X12	8 in. x 12 in.	bottom	ZD20X12	20 in. x 12 in.	side
ZD8X14	8 in. x 14 in.	bottom	ZD20X14	20 in. x 14 in.	side
ZD8X16	8 in. x 14 in.	bottom	ZD20X16	20 in. x 16 in.	side
ZD8X18	8 in. x 18 in.	bottom	ZD20X18	20 in. x 18 in.	side
ZD8X20	8 in. x 20 in.	bottom	ZD20X20	20 in. x 20 in.	side
ZD8X22	8 in. x 22 in.	bottom	ZD20X22	20 in. x 22 in.	bottom
ZD8X24	8 in. x 24 in.	bottom	ZD20X24	20 in. x 24 in.	bottom
ZD8X26	8 in. x 26 in.	bottom	ZD20X26	20 in. x 26 in.	bottom
ZD8X28	8 in. x 28 in.	bottom	ZD20X28	20 in. x 28 in.	bottom
ZD10X6	10 in. x 6 in.	side	ZD22X6	22 in. x 8 in.	side
ZD10X8	10 in. x 8 in.	side	ZD22X8	22 in. x 8 in.	side

* TRADELINE models • SUPER TRADELINE models

Zoning Systems—Dampers

Product Number	Size (in.)	Motor Mount	Product Number	Size (in.)	Motor Mount
ZD10X10	10 in. x 10 in.	side	ZD22X10	22 in. x 10 in.	side
ZD10X12	10 in. x 12 in.	bottom	ZD22X12	22 in. x 12 in.	side
ZD10X14	10 in. x 14 in.	bottom	ZD22X14	22 in. x 14 in.	side
ZD10X16	10 in. x 16 in.	bottom	ZD22X16	22 in. x 16 in.	side
ZD10X18	10 in. x 18 in.	bottom	ZD22X18	22 in. x 18 in.	side
ZD10X20	10 in. x 20 in.	bottom	ZD22X20	22 in. x 20 in.	side
ZD10X22	10 in. x 22 in.	bottom	ZD22X22	22 in. x 22 in.	side
ZD10X24	10 in. x 24 in.	bottom	ZD22X24	22 in. x 24 in.	bottom
ZD10X26	10 in. x 26 in.	bottom	ZD22X26	22 in. x 26 in.	bottom
ZD10X28	10 in. x 28 in.	bottom	ZD22X28	22 in. x 28 in.	bottom
ZD12X6	12 in. x 6 in.	side	ZD24X6	24 in. x 8 in.	side
ZD12X8	12 in. x 8 in.	side	ZD24X8	24 in. x 8 in.	side
ZD12X10	12 in. x 10 in.	side	ZD24X10	24 in. x 10 in.	side
ZD12X12	12 in. x 12 in.	side	ZD24X12	24 in. x 12 in.	side
ZD12X14	12 in. x 14 in.	bottom	ZD24X14	24 in. x 14 in.	side
ZD12X16	12 in. x 16 in.	bottom	ZD24X16	24 in. x 16 in.	side
ZD12X18	12 in. x 18 in.	bottom	ZD24X18	24 in. x 18 in.	side
ZD12X20	12 in. x 20 in.	bottom	ZD24X20	24 in. x 20 in.	side
ZD12X22	12 in. x 22 in.	bottom	ZD24X22	24 in. x 22 in.	side
ZD12X24	12 in. x 24 in.	bottom	ZD24X24	24 in. x 24 in.	side
ZD12X26	12 in. x 26 in.	bottom	ZD24X26	24 in. x 26 in.	bottom
ZD12X28	12 in. x 28 in.	bottom	ZD24X28	24 in. x 28 in.	bottom
ZD14X6	14 in. x 6 in.	side	ZD26X6	26 in. x 6 in.	side
ZD14X8	14 in. x 8 in.	side	ZD26X8	26 in. x 8 in.	side
ZD14X10	14 in. x 10 in.	side	ZD26X10	26 in. x 10 in.	side
ZD14X12	14 in. x 12 in.	side	ZD26X12	26 in. x 12 in.	side
ZD14X14	14 in. x 14 in.	side	ZD26X14	26 in. x 14 in.	side
ZD14X16	14 in. x 16 in.	bottom	ZD26X16	26 in. x 16 in.	side
ZD14X18	14 in. x 18 in.	bottom	ZD26X18	26 in. x 18 in.	side
ZD14X20	14 in. x 20 in.	bottom	ZD26X20	26 in. x 20 in.	side
ZD14X22	14 in. x 22 in.	bottom	ZD26X22	26 in. x 22 in.	side
ZD14X24	14 in. x 24 in.	bottom	ZD26X24	26 in. x 24 in.	side
ZD14X26	14 in. x 26 in.	bottom	ZD26X26	26 in. x 26 in.	side
ZD14X28	14 in. x 28 in.	bottom	ZD26X28	26 in. x 28 in.	bottom
ZD16X6	16 in. x 6 in.	side	ZD28X6	28 in. x 6 in.	side
ZD16X8	16 in. x 8 in.	side	ZD28X8	28 in. x 8 in.	side
ZD16X10	16 in. x 10 in.	side	ZD28X10	28 in. x 10 in.	side
ZD16X12	16 in. x 12 in.	side	ZD28X12	28 in. x 12 in.	side
ZD16X14	16 in. x 14 in.	side	ZD28X14	28 in. x 14 in.	side
ZD16X16	16 in. x 16 in.	side	ZD28X16	28 in. x 16 in.	side
ZD16X18	16 in. x 18 in.	bottom	ZD28X18	28 in. x 18 in.	side
ZD16X20	16 in. x 20 in.	bottom	ZD28X20	28 in. x 20 in.	side
ZD16X22	16 in. x 22 in.	bottom	ZD28X22	28 in. x 22 in.	side
ZD16X24	16 in. x 24 in.	bottom	ZD28X24	28 in. x 24 in.	side
ZD16X26	16 in. x 26 in.	bottom	ZD28X26	28 in. x 26 in.	side
ZD16X28	16 in. x 28 in.	bottom	ZD28X28	28 in. x 28 in.	side

* TRADELINE models • SUPER TRADELINE models

Zoning Systems—Dampers

SPRD Accessories and Replacement Parts

Counterweight Assemblies including arm, coupling and weight

Product Number	Description	Used With
32005981-002	8 inch SPRD Arm coupling	SPRD6, SPRD7, SPRD12X8, SPRD20X8
32005981-003	10 inch SPRD Arm coupling	SPRD8, SPRD9, SPRD12X10, SPRD20X10
32005981-004	12 inch SPRD Arm coupling	SPRD10, SPRD12, SPRD14, SPRD16, SPRD12X12, SPRD20X12
32005688-001	SPRD Counter weight	For all SPRD dampers only

Damper Actuators

Electrical Connections : Screw

Voltage (Vac): 24 Vac

Frequency: 60 Hz

Motor Timing: 30 seconds

Motor Type: power open/ power close

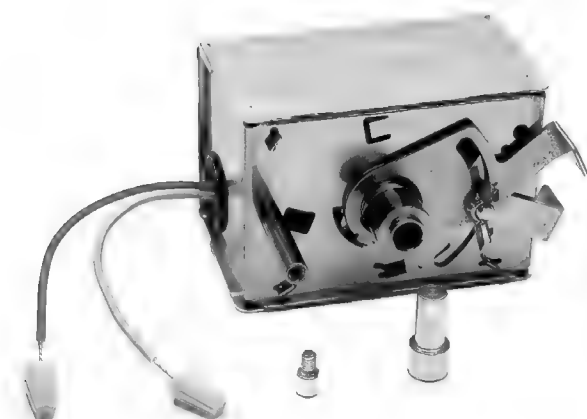
Other Motor Information: power open/power close

Wires to Motor: 3 wires

Type: Actuator

Product Number	Used With
MSTN	AOBD, AOBD-BM, ARCD, ASCD, IOBD, MVRH, MVRV, SRTD
* TRADELINE models • SUPER TRADELINE models	

M847D Damper Actuator



The M847D is a two position, 24 Vac spring return actuator designed to operate ARD and ZD zone dampers.

- Low voltage, spring-return damper actuator.
- Equipped with anti-rotation and drive shaft extensions for direct mounting to 7/16 inch diameter coupling style dampers.
- Adjustable range stops.

Electrical Connections : Terminal block

Voltage (Vac): 24 Vac

Frequency: 60 Hz

Motor Timing: 30 seconds energized

Motor Type: power open-closed/spring open-closed

Other Motor Information: 60 in. oz (423 mNm) at spring returned initial start position

90 degrees rotation (105 degrees Max.)

Spring Return - 10 seconds de-energized

Two Position, spst

Wires to Motor: 1/2 in. conduit, 2 wires

Type: Actuator

Product Number	Size (in.)	Motor Mount	Replaces	Used With	Includes
M847D1012	3-1/2 in. high, 2-3/8 in. wide, 3-3/8 in. deep	Direct connection to damper shaft	RDMH damper actuators, RDMZ damper actuators	AOBD dampers, ARD, ZD dampers	Anti-rotation and drive shaft extensions bag assembly
* TRADELINE models • SUPER TRADELINE models					

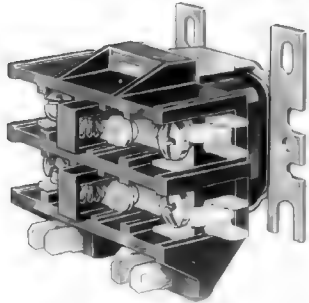


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Contactors

Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 1 and 2 pole



Definite purpose one (25A, 30A, 40A) and two (20A, 30A, 40A) pole contactors provide switching for across-the-line starting of inductive motors.

- Meets ARI-780 Standard at started ratings (500,000 cycle mechanical life, 200,000 cycle electrical life and 10,000 cycle recycle life); the most demanding ARI requirement.

- Silver cadmium oxide contacts provide long life under demanding duty cycles.
- Low profile design allows for more wiring room.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Temperature Ratings: -4 F to +149 F (-20 C to +65 C)

Approvals:

Canadian Standards Association: Certified: File No. LR6535

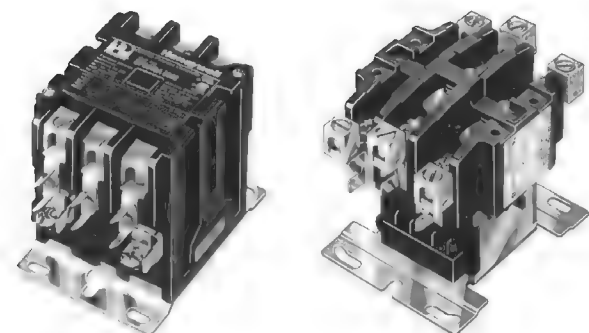
Underwriters Laboratories, Inc: UL Component Recognized: File No. 14480, Guide No. NLDX2

Electrical Ratings:

	Contacts (AFL @ 240 Vac & 277 Vac)	Contacts (resistive @ 240 Vac & 277 Vac)
DP1025	25 A @ 240/277 Vac	30 A @ 240/277 Vac, 480 Vac, 600 Vac
DP1030	30 A @ 240/277 Vac	48 A @ 240/277 Vac
DP1040	40 A @ 240/277 Vac	55 A @ 240/277 Vac
DP2020A	20 A @ 240/277 Vac	30 A @ 240/277 Vac, 480 Vac, 600 Vac
DP2020B	20 A @ 240/277 Vac	30 A @ 240/277 Vac
DP2030A,D	30 A @ 240/277 Vac	48 A @ 240/277 Vac
DP2030B,C	30 A @ 240/277 Vac	48 A @ 240/277 Vac, 480 Vac, 600 Vac
DP2040	40 A @ 240/277 Vac	55 A @ 240/277 Vac

	Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)	Contact Connections (coil)
		(inch)	(mm)			
*	DP1025A5005	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	1 with shunt	#10-32 combination head screws	1/4 in. quick-connects
*	DP1030A5013	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	1 with shunt	#10-32 combination head screws	1/4 in. quick-connects
*	DP1040A5004	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	67 mm high, 50 mm wide, 83 mm deep	1 with shunt	#10-32 combination head screws	1/4 in. quick-connects
*	DP2020A5021	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	#10-32 combination head screws	1/4 in. quick-connects
*	DP2020B5038	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	#10-32 combination head screws	1/4 in. quick-connects
*	DP2030A5004	3 1/4 in. high, 2 5/8 in. wide, 3 3/4 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	#10-32 combination head screws and sems screws	1/4 in. quick-connects
•	DP2030A5012	3 1/4 in. high, 2 5/8 in. wide, 3 3/4 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	sems screws	1/4 in. quick-connects
*	DP2030B5003	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	sems screws	1/4 in. quick-connects
•	DP2030B5011	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	sems screws	1/4 in. quick-connects
*	DP2030C5002	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	sems screws	1/4 in. quick-connects
•	DP2030C5010	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	sems screws	1/4 in. quick-connects
*	DP2030D5001	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	sems screws	1/4 in. quick-connects
*	DP2040A5003	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10-32 combination head screws	1/4 in. quick-connects
*	DP2040C5001	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10-32 combination head screws	1/4 in. quick-connects
* TRADELINE models • SUPER TRADELINE models						

Deluxe Honeywell PowerPro DP-Series Definite Purpose Contactors - 3 pole



Definite purpose three (25A to 120A) and four (40A) pole contactors provide switching for across-the-line starting of induction motors.

- Shrouded coils on 3 pole (25A to 60A) models protect the coil from harsh environment factors.
- Moisture proof epoxy is used to encapsulate the 3 pole 75A through 120A coils.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.
- Traditional design meets many needs.
- Full array of replacement coils, contact sets and accessories available.

Approvals:

Canadian Standards Association: Recognized

Underwriters Laboratories, Inc: UL Component Recognized

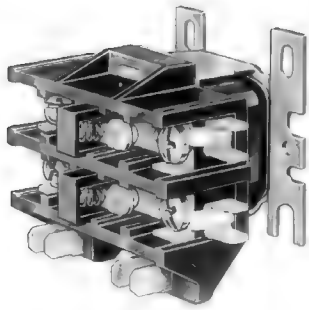
Electrical Ratings:

	(ALR @ 240 Vac & 277 Vac)	Contacts (AFL @ 240 Vac & 277 Vac)	Contacts (resistive @ 240 Vac & 277 Vac)
DP3025	150 A @ 240/277 Vac, 125 A @ 480 Vac, 100 A @ 600 Vac	25 A @ 240/277 Vac	35 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3030	—	30 A @ 240 Vac/277 Vac, 480 Vac, 600 Vac	40 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3040	—	40 A @ 240/277 Vac, 480 Vac, 600 Vac	50 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3050	—	50 A @ 240/277 Vac, 480 Vac, 600 Vac	63 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3060	—	60 A @ 240/277 Vac, 480 Vac, 600 Vac	75 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3120	720 A @ 240/277 Vac, 600 A @ 480 Vac, 480 A @ 600 Vac	120 A @ 240/277 Vac, 480 vac, 600 vac	150 A @ 240/277 Vac, 480 Vac, 600 vac

Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)	Contact Connections (coil)	Description
	(inch)	(mm)				
DP3025C5001			3	#10-32 combination head screws	1/4 in. quick-connects and #6 screws	Contactor
* DP3030A5003	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	#10-32 combination head screws	1/4 in. quick-connects and #6 screws	Contactor
* DP3030B5002	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	#10-32 combination head screws	1/4 in. quick-connects and #6 screws	Contactor
* DP3030C5001	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	#10-32 combination head screws	1/4 in. quick-connects and #6 screws	Contactor
* DP3040A5002	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3040B5001	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3040C5000	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3050A5001	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3050B5000	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3050C5009	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3060A5000	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3060B5009	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* DP3060C5008	3 1/8 in. high, 2 7/8 in. wide, 4 1/16 in. deep	79 mm high, 74 mm wide, 103 mm deep	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
DP3120A1001	5 1/2 in. high, 5 3/16 in. wide, 6 1/4 in. long	135 mm high, 132 mm wide, 159 mm long	3	lug connectors	1/4 in. quick-connects and #6 screws	Contactor
* TRADELINE models • SUPER TRADELINE models						

Contactors

Economy DP-Series Definite Purpose Contactors - 2 Pole



Definite purpose two pole (30A and 40A) contactors provide switching for across-the-line starting of induction motors.

- Not ARI-780 compliant; use where a "ruggedized" device is not required.
- Light-duty bonded silver cadmium oxide contacts.
- Low profile design fits into tight wiring compartments.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.

Temperature Ratings: -4 F to +149 F (-20 C to +65 C)

Approvals:

Canadian Standards Association: Certified: File No. LR6535

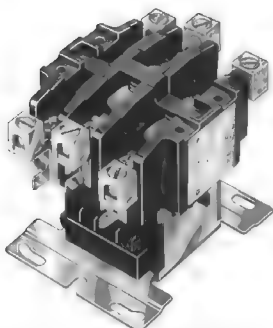
Underwriters Laboratories, Inc: UL Component Recognized: File No. 14480, Guide No. NLDX2

Electrical Ratings:

	Contacts (AFL @ 240 Vac & 277 Vac)	Contacts (resistive @ 240 Vac & 277 Vac)
DP1040	40 A @ 240/277 Vac	55 A @ 240/277 Vac
DP2030	30 A @ 240/277 Vac	48 A @ 240/277 Vac, 480 Vac, 600 Vac
DP2040A, B	40 A @ 277 Vac, 480 Vac & 600 Vac	55 A @ 277 Vac, 480 Vac & 600 Vac
DP2040B 5000 Series	40 A @ 240/277 Vac	55 A @ 240/277 Vac
DP2040	40 A @ 277 Vac, 480 Vac & 600 Vac	55 A @ 277 Vac, 480 Vac & 600 Vac

Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)	Contact Connections (coil)
	(inch)	(mm)			
DP1040B5003	2 3/16 in. high, 2 1/2 in. wide, 3 5/16 in. deep	67 mm high, 50 mm wide, 83 mm deep	1 with shunt	#10-32 combination head screws	1/4 in. quick-connects
DP2030A1003	3 1/4 in. high, 2 5/8 in. wide, 3 3/4 in. deep	56 mm high, 59 mm wide, 84 mm deep	2	#10 combination head screws	double 1/4 in. quick-connects
DP2030B1002	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10 combination head screws	double 1/4 in. quick-connects
DP2030C1001	2 3/16 in. high, 3 5/16 in. wide, 2 1/2 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10 combination head screws	double 1/4 in. quick-connects
DP2040A1002	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10-32 combination head screws	double 1/4 in. quick-connects
DP2040B1001	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10 combination head screws	double 1/4 in. quick-connects
* DP2040B5002	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10-32 combination head screws	1/4 in. quick-connects
DP2040C1000	2 3/16 in. high, 3 5/16 in. wide, 2 5/32 in. deep	56 mm high, 84 mm wide, 55 mm deep	2	#10 combination head screws	double 1/4 in. quick-connects
* TRADELINE models • SUPER TRADELINE models					

Economy DP-Series Definite Purpose Contactors - 3 and 4 Pole



Definite purpose three (25A to 120A) and four (40A) pole contactors provide switching for across-the-line starting of induction motors.

- Shrouded coils on 3 pole (25A to 60A) models protect the coil from harsh environment factors.
- Moisture proof epoxy is used to encapsulate the 3 pole 75A through 120A coils.
- Multiple mounting holes and slots for convenient, interchangeable mounting with most competitive devices.
- Traditional design meets many needs.

- Full array of replacement coils, contact sets and accessories available.

Temperature Ratings: -4 F to +149 F (-20 C to +65 C)

Contact Connections (coil): 1/4 in. quick-connects and #6 screws

Approvals:

Canadian Standards Association: Certified: File No. LR6535

Underwriters Laboratories, Inc: UL Component Recognized: File No. 14480, Guide No. NLDX2

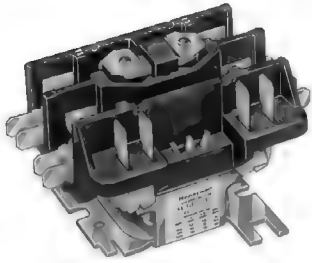
Electrical Ratings:

	Contacts (AFL @ 240 Vac & 277 Vac)	Contacts (resistive @ 240 Vac & 277 Vac)
DP3030	30 A @ 240 Vac/277 Vac, 480 Vac, 600 Vac	40 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3040, DP4040	40 A @ 240/277 Vac, 480 Vac, 600 Vac	50 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3050	50 A @ 240/277 Vac, 480 Vac, 600 Vac	63 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3060	60 A @ 240/277 Vac, 480 Vac, 600 Vac	75 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3075	75 A @ 240/277 Vac, 480 Vac, 600 Vac	93 A @ 240/277 Vac, 480 Vac, 600 Vac
DP3090	90 A @ 240/277 Vac, 480 Vac, 600 Vac	112 A @ 240/277 Vac, 480 Vac, 600 Vac

Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)
	(inch)	(mm)		
* DP3030A1002	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	#10 combination head screws
* DP3030B1001	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	#10 combination head screws
* DP3030C1000	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	#10 combination head screws
* DP3040A1001	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	lug connectors
* DP3040B1000	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	lug connectors
* DP3040C1009	2 7/8 in. high, 2 1/4 in. wide, 4 in. deep	74 mm high, 57 mm wide, 102 mm deep	3	lug connectors
* DP3050A1000	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3050B1009	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3050C1008	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3060A1009	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3060B1008	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3060C1007	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	3	lug connectors
* DP3075A1007	4 3/4 in. high, 3 5/8 in. wide, 5 3/16 in. deep	121 mm high, 90 mm wide, 132 mm deep	3	lug connectors
* DP3075B1006	4 3/4 in. high, 3 5/8 in. wide, 5 3/16 in. deep	121 mm high, 90 mm wide, 132 mm deep	3	lug connectors
* DP3075C1005	4 3/4 in. high, 3 5/8 in. wide, 5 3/16 in. deep	121 mm high, 90 mm wide, 132 mm deep	3	lug connectors
* DP3090B1005	4 3/4 in. high, 3 5/8 in. wide, 5 3/16 in. deep	121 mm high, 90 mm wide, 132 mm deep	3	lug connectors
* DP3090C1004	4 3/4 in. high, 3 5/8 in. wide, 5 3/16 in. deep	121 mm high, 90 mm wide, 132 mm deep	3	lug connectors
* DP4040A1000	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	4	lug connectors
* DP4040B1009	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	4	lug connectors
* DP4040C1008	2 7/8 in. high, 2 7/8 in. wide, 4 in. deep	74 mm high, 74 mm wide, 102 mm deep	4	lug connectors
* TRADELINE models • SUPER TRADELINE models				

Contactors

R4243; R8243 Definite Purpose Contactor



These SPST and DPST electromagnetically operated contactors provide switching for across-the-line starting of induction motors as used in hermetic refrigeration compressors or for switching electric resistance heaters.

Temperature Ratings: -20 F to +155 F (-29 C to +68 C)

Approvals:

Canadian Standards Association: Certified: File No. LR35066, Guide No. 361E0.2

Underwriters Laboratories, Inc: UL Component Recognized: File No. E59779, Guide No. NLDX2

- The contactors are rated up to 600 Vac, per pole, up to 30 A inductive, and up to 40 A resistive load.
- SPST models provide single line break start of induction motors for air conditioning of refrigeration manufacturers.
- Optional jumper strap with two No.10 screws for line or load connection and two double quick-connect accessory terminals.
- Convenient interchangeable mounting with most competitive devices. Single screw mounting possible with shear formed tab in panel.
- Bridge type, double break, heavy duty silver alloy contacts pick up and open without chattering when slowly rising or slowly decreasing voltage is applied to operating coil.
- Contact terminals have No.10 binding screws for load connections, and terminal clamp screws for line connections. Two NEMA type 1/4 in. (6.4 mm) quick-connects are provided for accessory connections.
- Optional terminals clamp screw assemblies or pressure lugs.

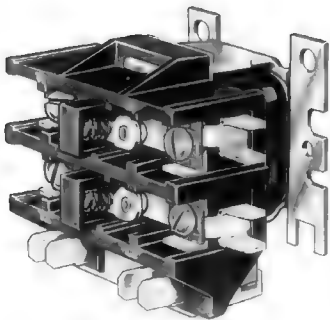
Electrical Ratings:

Contacts (AFL @ 240 Vac & 277 Vac)	Contacts (resistive @ 240 Vac & 277 Vac)
30 A @ 240/277 Vac	40 A @ 240/277 Vac, 480 Vac, 600 Vac

Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)	Contact Connections (coil)
	(inch)	(mm)			
R4243B1012	2 1/2 in. high, 3 5/16 in. wide, 2 3/16 in. deep	59 mm high, 84 mm wide, 56 mm deep	2	tin-plated, brass terminals with no. 10 binding head screws (accept up to no. 10 awg wire) on load side; terminal clamp screws (accept up to no. 8 awg wire) on line side.	male double quick-connects

* TRADELINE models • SUPER TRADELINE models

R8246 Electric Heat Contactor



Provide conventional on-off control of heating elements and fan in an electric furnace.

- Designed for quiet operation.
- R8246A and R8229A replace over 50 Honeywell and competitive electric heat primaries, including the Honeywell R8330 Electric Furnace Sequencer.
- Use on furnaces with a line voltage or pilot duty limit.
- Simple ON-OFF switching - readily understood and easily serviced- Eliminates cold drafts on system startup.

Temperature Ratings: -40 F to +165 F (-40 C to +74 C)

Approvals:

Canadian Standards Association: Recognized

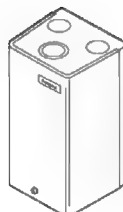
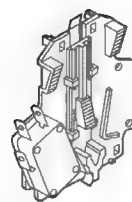
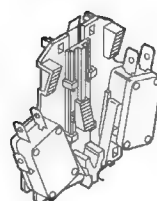
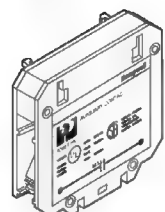
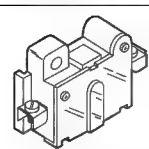
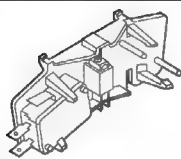
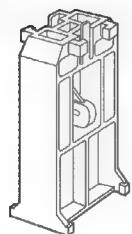
Underwriters Laboratories, Inc: UL Component Recognized

Electrical Ratings: First Pole Resistive Only, Second Pole Resistive/ Inductive Combined: See Specs.


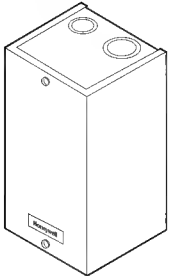
Product Number	Dimensions, Approximate		Poles	Electrical Connections (main)	Description
	(inch)	(mm)			
• R8246A1038	2 3/16 in. high, 3 5/16 in. wide, 2 3/16 in. deep	56 mm high, 84 mm wide, 56 mm deep	2	Male 1/4 in. (6 mm) quick-connects plus terminal clamp screws	Electric Heat Relay

* TRADELINE models • SUPER TRADELINE models

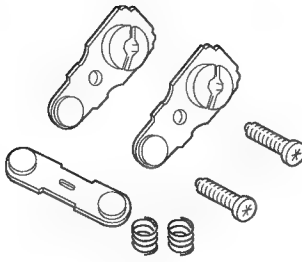
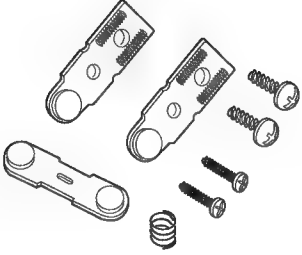
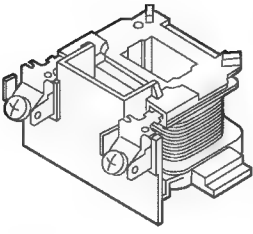
Contactor Accessories

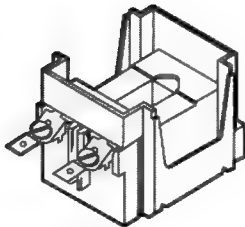
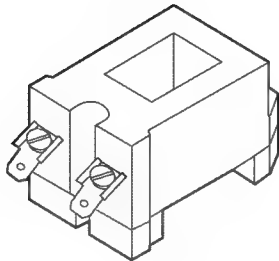
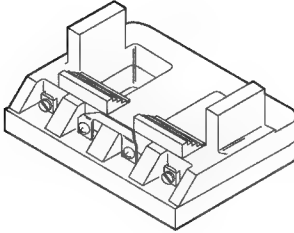
OS Number	Description	Used With	
129703A	NEMA 1 Rated Metal Contact Enclosure for R8212, R8214, and R8220 (2-pole and 3-pole models only.)	R8212, R8214, R8220 (2-pole and 3-pole models only.)	
138552B	NEMA 1 Enclosure. Used with 1 and 2 pole, 20-30 A PowerPro and Economy models.	1 and 2 pole, 20-30 A PowerPro and Economy models	
139278B	SPDT Auxiliary Switch for R4212/R8212, R4214/R8214 and R4220/R8220 (2 and 3-pole models only) with screws, mounting brackets and screws	R4212/R8212, R4214/R8214 R4220/R8220(2 & 3-pole models only)	
206978A	1 SPDT Snap-on side mounted auxiliary interlock, 10 A @ 240 Vac. Use with 3-pole, 25-60 A PowerPro and Economy models for light duty use	Use with 3-pole, 25-60 A PowerPro & Economy models	
206978B	2 SPDT Snap-on side mounted auxiliary interlock, 10 A @ 240 Vac. Use with 3-pole, 25-60 A PowerPro and Economy models for light duty use.	Use with 3-pole, 25-60 A PowerPro & Economy models	
206978C	1 N.O. Snap-on side mounted auxiliary interlock, 10 A @ 600 Vac. Use with 3-pole, 25-60 A PowerPro and Economy models for heavy duty use.	Use with 3-pole, 25-60 A PowerPro & Economy models	
206978D	1 N.C. Snap-on side mounted auxiliary interlock, 10 A @ 600 Vac. Use with 3-pole, 25-60 A PowerPro and Economy models for heavy duty use.	Use with 3-pole, 25-60 A PowerPro & Economy models	
206978E	1 N.O. and 1 N.C. Snap-on side mounted auxiliary interlock, 10 A @ 600 Vac for Heavy duty use.		
206978F	1 N.O. Screw-on side mounted auxiliary interlock, 5 A @ 600 Vac. Use with 3-pole, 75-90 A Economy models for heavy duty use.	Use with 3-pole, 75-90 A Economy models	
206978G	1 N.C. Screw-on side mounted auxiliary interlock, 5 A @ 600 Vac. Use with 3-pole, 75-90 A Economy models for heavy duty use.	Use with 3-pole, 75-90 A Economy models	
206978H	1 SPDT Screw-on side mounted auxiliary interlock, 10 A @ 240 Vac. Use with 3-pole, 25-90 A Economy models for light duty use.	Use with 3-pole, 25-90 A Economy models	
206979A	Mechanical interlock used to interlock two contactors for reversing applications, prevents simultaneous operation of two contactors. Use with 3-pole, 25-60 A PowerPro and Economy models.	Use with 3-pole, 25-60 A PowerPro & Economy models	

Contactors

OS Number	Description	Used With	
206980A	NEMA 1 Enclosure. Used with 3-pole, 25-60 A, 1 and 2-pole, 40 A PowerPro and Economy models.	Used with 3-pole, 25-60 A PowerPro and Economy models 1 and 2-pole, 40 A PowerPro and Economy models	
206980B	NEMA 1 Enclosure. Used with 3-pole, 75-90 A PowerPro and Economy models.	Used with 3-pole, 75-90 A PowerPro and Economy models.	

Contactor Replacement Parts

OS Number	Description	Used With	
206981A	3 pole 25 A PowerPro Replacement Contact Kit	Use with 3-pole, 25 A PowerPro & Economy models	
206981B	3 pole 30A PowerPro Replacement Contact Kit	Use with 3-pole, 30 A PowerPro & Economy models	
206981C	3 pole 40 A PowerPro Replacement Contact Kit	Use with 3-pole, 40 A PowerPro & Economy models	
206981D	3 pole 50A PowerPro Replacement Contact Kit	Use with 3-pole, 50 A PowerPro & Economy models	
206981E	3 pole 60A PowerPro Replacement Contact Kit	Use with 3-pole, 60 A PowerPro & Economy models	
206982B	3 pole 25A and 30A Economy Model Replacement Contact Kit	Use with 3-pole, 25 A and 30 A Economy models	
206982C	3 pole 40A Economy Model Replacement Contact Kit	Use with 3-pole, 40 A Economy models	
206982D	3 pole 50A Economy Model Replacement Contact Kit	Use with 3-pole, 50 A Economy models	
206982E	3 pole 60A Economy Model Replacement Contact Kit	Use with 3-pole, 60 A Economy models	
206982F	3 pole 75A Economy Model Replacement Contact Kit	Use with 3-pole, 75 A Economy models	
206982G	3 pole 90A Economy Model Replacement Contact Kit	Use with 3-pole, 90 A Economy models	
206982H	3 pole 120A Economy Model Replacement Contact Kit	Use with 3-pole, 120 A Economy models	
206983A	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (24V 60 Hz, 24V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983B	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (110-120V 60 Hz, 110V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983C	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (200-208V 60 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983D	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (208-240V 60 Hz, 190-220V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983E	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (277V 60 Hz, 240V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983F	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (440-480V 60 Hz, 380-440V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	
206983G	Replacement Coil Kit for 25A to 60A model PowerPro Contactors (550-600V 60 Hz, 550V 50 Hz)	Use with 3-pole, 25-60 A PowerPro & Economy models (Class F)	

OS Number	Description	Used With	
206984A	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (24V 60 Hz, 24V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984B	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (110-120V 60 Hz, 110V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984C	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (200-208V 60 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984D	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (208-240V 60 Hz, 208-220V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984E	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (277V 60 Hz, 240V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984F	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (440-480V 60 Hz, 380-440V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206984G	Replacement Coil Kit for 25A to 60A model Economy Contactors with shrouded coils (550-600V 60 Hz, 550V 50 Hz)	Use with 3 & 4-pole, 25-60 A Economy models (Class H)	
206985A	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (24V 60 Hz, 24V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206985B	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (110-120V 60 Hz, 110V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206985C	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (200-208V 60 Hz)	Use with 3-pole, 75-95 A Economy models	
206985D	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (208-240V 60 Hz, 208-220V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206985E	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (277V 60 Hz, 240V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206985F	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (440-480V 60 Hz, 380-440V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206985G	Replacement Coil Kits for 75A to 90A model Economy Contactors with molded coils (550-600V 60 Hz, 550V 50 Hz)	Use with 3-pole, 75-95 A Economy models	
206986A	Replacement Coil Kits for 120A model Economy Contactors with molded coils (24V 60 Hz, 24V 50 Hz)	Use with 120 A Economy models	
206986H	Replacement Coil Kits for 120A model Economy Contactors with molded coils (110-120/220-240V 60 Hz, 110/190-220V 50 Hz)	Use with 120 A Economy models	
206986J	Replacement Coil Kits for 120A model Economy Contactors with molded coils (220-240/440-480V 60 Hz, 190-220/380-440V 50 Hz)	Use with 120 A Economy models	

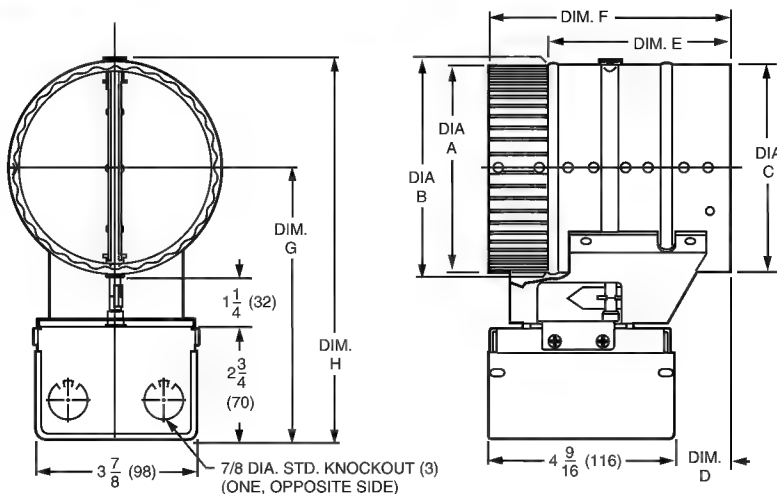
Vent Dampers

D896 Automatic Vent Damper



For use with atmospheric type, gas-fired equipment to reduce home heating losses by closing off the vent between cycles.

- Visual indicator shows damper position.
- Wiring harnesses available separately to fit a variety of applications.
- For use only on atmospheric type, gas-fired furnaces and boilers equipped with draft hoods.
- Includes wiring harness on select models to fit 4-wire plug receptacle on S86/S8600/S8610/S8620 or Penn Baso G60 or G66.
- Applicable to direct spark ignition (DSI), intermittent pilot (IP), hot surface ignition (HSI), and standing pilot systems.
- Requires dual automatic combination gas control valve or two separate single function main gas valves.
- Interlock switch provides safe operation; burner fires only with damper in open position.
- Quiet motor and relay.



BODY SIZE (REF)	DIA. A in. (mm)	DIA. B in. (mm)	DIA. C in. (mm)	DIM. D in. (mm)	DIM. E in. (mm)	DIM. F in. (mm)	DIM. G in. (mm)	DIM. H in. (mm)
4 (102)	3 15/16 (100)	4 (102)	4 1/16 (103)	1 9/16 (40)	4 1/2 (114)	6 (152)	6 3/4 (171)	8 7/8 (225)
5 (127)	4 15/16 (125)	5 (127)	5 1/16 (129)	1 9/16 (40)	4 1/2 (114)	6 (152)	7 1/4 (184)	9 7/8 (251)
6 (152)	5 15/16 (151)	6 (152)	6 1/16 (154)	1 9/16 (40)	4 1/2 (114)	6 (152)	7 3/4 (197)	10 7/8 (276)
7 (178)	6 15/16 (176)	7 (178)	7 1/16 (179)	3 3/16 (81)	7 1/2 (191)	9 (229)	8 1/4 (209)	11 7/8 (301)
8 (203)	7 15/16 (202)	8 (203)	8 1/16 (205)	3 3/16 (81)	7 1/2 (191)	9 (229)	8 3/4 (222)	12 7/8 (327)
9 (229)	8 15/16 (224)	9 (229)	9 1/16 (230)	3 3/16 (81)	7 1/2 (191)	9 (229)	9 1/4 (235)	13 7/8 (352)
10 (254)	9 15/16 (252)	10 (254)	10 1/16 (256)	5 3/16 (132)	11 1/2 (292)	13 (330)	9 3/4 (248)	14 7/8 (378)
11 (279)	10 15/16 (278)	11 (279)	11 1/16 (281)	5 3/16 (132)	11 1/2 (292)	13 (330)	10 1/4 (260)	15 7/8 (403)
12 (305)	11 15/16 (303)	12 (305)	12 1/16 (306)	5 3/16 (132)	11 1/2 (292)	13 (330)	10 3/4 (274)	16 7/8 (428)

M11381

Electrical Connections: Four-wire plug receptacle

Electrical Ratings (power supply): 24 Vac

Frequency: 60 Hz

Temperature Ratings (ambient): 32 F to 150 F (0 C to 66 C)

Temperature Ratings (max. furnace stack): 575 F (302 C)

Approvals:

Canadian Standards Association: Design Certified: File No. 1029AVD-9081

Product Number	Damper Size		Max. Appliance Input	Operating Times		Description	Includes
	(inch)	(mm)		min. closing	min. opening		
* D896A1186	4 in.	102 mm	27,842 W 95,000 Btuh	15 Seconds	30 Seconds	4 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
* D896A1194	5 in.	127 mm	43,475 W 148,000 Btuh	15 Seconds	30 Seconds	5 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.

* TRADELINE models • SUPER TRADELINE models

	Product Number	Damper Size		Max. Appliance Input	Operating Times		Description	Includes
		(inch)	(mm)		min. closing	min. opening		
*	D896A1228	9 in.	229 mm	139,175 W 475,000 Btuh	15 Seconds	30 Seconds	9 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1236	10 in.	254 mm	173,500 W 590,000 Btuh	15 Seconds	30 Seconds	10 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1277	6 in.	152 mm	62,131 W 212,000 Btuh	15 Seconds	30 Seconds	6 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1285	7 in.	178 mm	84,991 W 290,000 Btuh	15 Seconds	30 Seconds	7 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1293	8 in.	203 mm	110,488 W 377,000 Btuh	15 Seconds	30 Seconds	8 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1301	11 in.	279 mm	210,300 W 715,000 Btuh	15 Seconds	30 Seconds	11 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
*	D896A1319	12 in.	305 mm	277,000 W 942,000 Btuh	15 Seconds	30 Seconds	12 in. vent pipe	8 ft (2.4m), 4-wire cable with mating plug for D896 on one end and mating plug for S86/S8600/S8610/S8620 or Penn Baso G60 or G66 plug receptacle on the other. Both ends equipped with outlet box connector.
* TRADELINE models • SUPER TRADELINE models								

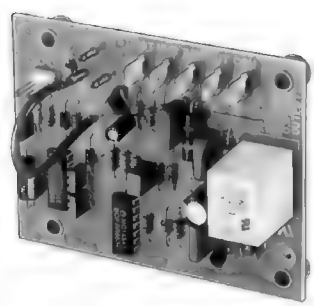
M896A Damper Actuator

Temperature Ratings (ambient): 32 F to 150 F (0 C to 66 C)

Product Number	Description	Used With
M896A1004	Replacement Damper Actuator for D896	D896
* TRADELINE models • SUPER TRADELINE models		

Defrost Controls

ST74 Defrost Controllers



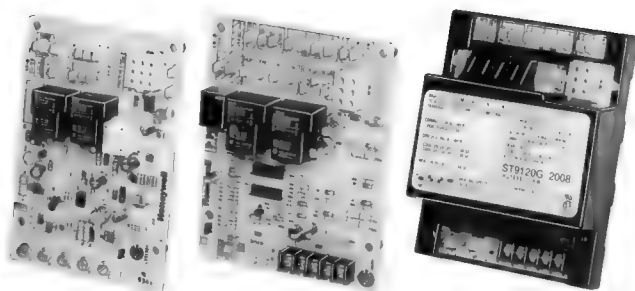
Low voltage time/temperature defrost controller for heat pumps.

- Reset the defrost cycle by remote contact closure.
- Mounts in outdoor section of heat pump.
- Test pins speed up defrost cycle for easy operational checkout.
- Reliable relay switch output.
- Moisture-protective board coating.

Increased Time Off: None

	Product Number	Time Off	Time On
*	ST74A1053	Selectable: 50/70/90 min.	10 min. (factory-set)
* TRADELINE models • SUPER TRADELINE models			

ST9101; ST9120; ST9141 Electronic Fan Timers



ST9101; ST9120A,C,G; ST9141 integrate control of combustion blower and circulating fan operations in a gas warm air appliance.

- Central appliance wiring point simplifies appliance assembly and service.
- Fixed or field-adjustable heat fan on delay; field adjustable heat fan off delay.

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 50/60 Hz

Approvals:

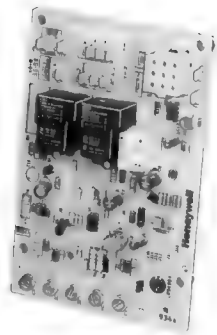
Canadian Standards Association: Listed

Underwriters Laboratories, Inc: UL Component Listed

Product Number	Application	Heat Fan Off Delay	Heat Fan On Delay	Cool Fan Off Delay	Cool Fan On Delay	Temperature Ratings		Replacement Parts
						(F)	(C)	
ST9101A1022	Trade Available. Fixed Heat Fan On Delay: 20 sec; Adjustable Heat Fan Off Delay: (90,120,150,180) Set At 120 sec; Fixed Cool Fan On and Off Delay: 0 sec	adj. 90, 120, 150, 180 sec (set at 120 sec)24 Vac	adj. 90, 120, 150, 180 sec (set at 120 sec)50/60 Hz	fixed 0 sec	fixed 0 sec	-40 F to +160 F	-40 C to +70 C	ST9101A1006, ST9101A1014
ST9120A2004	A single circuit board providing combustion air blower control. Two speed circulating air blower control, limit circuit inputs, thermostat wiring terminations, and a central appliance wiring point for warm air heating appliances.	18 to 30 Vac adj.; set at 120 sec.	adj.; set at 120 sec.60 Hz	fixed 0 sec	fixed 6 sec	-40 F to +175 F	-40 C to +79 C	ST9120A1006, ST9120A2004
ST9120C2010	A single circuit board providing combustion air blower control. Two speed circulating air blower control, limit circuit inputs, thermostat wiring terminations, and a central appliance wiring point for warm air heating appliances.	18 to 30 Vac adj.; set at 120 sec.	adj.; set at 120 sec.60 Hz	fixed 30 sec	fixed 6 sec	-40 F to +175 F	-40 C to +79 C	ST9120B1005
ST9120G4038	—	18 to 30 Vac adj. 60, 100, 140, 180 (set at 140 sec)	adj. 60, 100, 140, 180 (set at 140 sec)60 Hz	fixed 30 sec	fixed 30 sec	-40 F to +175 F	-40 C to +79 C	ST9120C4040S, T9120C3000, ST9120C4008, ST9120C4016, ST9120G2008, ST9120G2016, ST9120G2024, ST9120G4004, ST9120G4012, ST9120G4038
ST9141A1002	—	18 to 30 Vac adj. 60, 100, 140, 180 (set at 140 sec)	adj. 60, 100, 140, 180 (set at 140 sec)60 Hz	fixed 60 sec	fixed 6 sec	-40 F to +175 F	-40 C to +79 C	ST9141A 1002
* TRADELINE models • SUPER TRADELINE models								

Electronic Timer Boards

ST9103 Electronic Fan Timers



ST9103A integrates control of burner and circulating fan operations in an oil furnace.

- Central appliance wiring point simplifies appliance assembly and service.
- Fixed or field-adjustable heat fan on delay; field adjustable heat fan off delay.

Electrical Ratings (Vac): 18 to 30 Vac

Frequency (Hz): 50/60 Hz

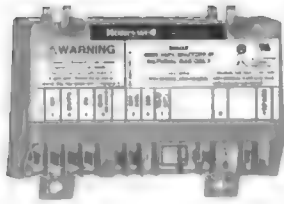
Approvals:

Canadian Standards Association: Listed

Underwriters Laboratories, Inc: UL Component Listed

Product Number	Application	Heat Fan Off Delay	Heat Fan On Delay	Cool Fan Off Delay	Cool Fan On Delay	Temperature Ratings		Replacement Parts
						(F)	(C)	
ST9103A1002	A single circuit board providing combustion air blower control, two speed circulating air blower control, oil primary control, limit circuit inputs, thermostat wiring terminations, & a central appliance wiring point for an oil fixed furnace.	18 to 30 Vac adj. 60, 90, 120, 150 (set at 150 sec)18 to 30 Vac	18 to 30 Vac adj. 60, 90, 120, 150 (set at 150 sec)50/60 Hz	fixed 0 sec	fixed 0 sec	-40 F to + 150 F	-40 C to + 66 C	ST9103A1002
* TRADELINE models • SUPER TRADELINE models								

S8600 Electronic Intermittent Pilot Module



Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)
Electrical Ratings (Vac): 24 Vac
Flame Sense: Remote Sense [two rod] - Ignition source and flame sense use independent components in the flame
Frequency (Hz): 60 Hz
Gas Type: LP/Natural

These ignition modules provide ignition sequence, flame monitoring and safety shutoff for intermittent pilot central furnaces and heating appliances.

- Provide up to 1.0 A pilot and 1.0 main valve current rating.
- Use a separate igniter and sensor (Q179C with igniter and sensor mounted on one bracket, or Q354 sensor with Q345, Q346, Q348, Q362 or Q381 igniter-sensor recommended.)
- Can be used on natural or LP gas; they provide 100 percent shutoff on ignition failure.
- Lock out on shutoff. Manual reset is required.

Ignition Source: Internal high voltage spark generator

Ignition System Type: Intermittent Pilot

Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)

Typical Ignition Hardware: Q179C

Approvals: CSA Design Certified; UL Component Recognized.

Product Number	Ignition Sequence	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
S8600B1025	Single trial for pilot burner ignition (then shut down and lockout)	1	15 sec	none

* TRADELINE models • SUPER TRADELINE models

S8610; S8670 Intermittent Pilot Modules



Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)
Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz
Electrical Ratings (Vac): 24 Vac
Flame Failure Response Time (sec): 0.8 sec @ 1.0 mA flame current
Flame Sense: Single Rod
Frequency (Hz): 60 Hz
Gas Type: Natural
Ignition Source: Internal high voltage spark generator
Ignition System Type: Intermittent Pilot

Provide electronic control of intermittent pilot ignition systems used on gas-fired furnaces, boilers and other heating appliances.

- Provide ignition sequences, flame monitoring and safety shutoff for intermittent pilot central furnaces and heating appliances.
- Functional equivalent of S86, S860, and S90 modules.
- Include spark cable adapter to allow field replacement of S86, S860, and S90 without replacing existing spark cable.
- Include relay contacts for use with any intermittent pilot gas control string with maximum 1.0A pilot and 2.0A main valve rating; Honeywell VR8204, VR8304, or VR8440 combination gas control recommended.
- S8610F is for use with natural gas only; modules do not provide 100 percent pilot gas shutoff if pilot fails to light.
- S8610H; S8670D are for use with natural or LP gas; modules provide 100 percent pilot gas shutoff and lockout if pilot fails to light.

Maximum Valve Load @ 24 Vac (Amps): 1A Pilot, 2A Main @ 165 F; 1A Pilot, 1A Main @ 175 F

Maximum Ambient Temperature Ratings: -40 F to +165 F (-40 C to +74 C)

Typical Gas Control: VR8204, VR8304

Typical Ignition Hardware: Q345, Q3451

Approvals: CSA Design Certified; UL Component Recognized.

Accessories:

394800-30 CABLE ASY MDSE

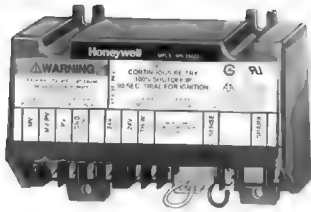
394801-30 IGN CABLE ASY MDSE

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)	Includes
* S8610F1008	Continuous trial for pilot burner ignition [no shut down or lockout]	—	n/a	continuous	none	—
* S8610H1004	Single trial for pilot burner ignition [then shut down and lockout]	1	1	15 sec max.	none	—
* S8610H1020	Single trial for pilot burner ignition [then shut down and lockout]	1	1	15 sec max.	none	Damper connection with automatic vent damper plug
* S8670D1000	Single trial for pilot burner ignition [then shut down and lockout]	90 sec max.	1	90 sec max.	30 sec min.	—

* TRADELINE models • SUPER TRADELINE models

Gas Heating—Ignition Modules

S8610U Universal Intermittent Pilot Module



Field service replacement for most Honeywell, Robertshaw, Johnson, and UTEC (HSC) Intermittent Pilot Ignition Modules. Provides electronic control of most intermittent pilot ignition systems used on gas-fired furnaces, boilers, and other heating appliances.

Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)

Between Trial Time (sec): 5 minute delay after failed trial for ignition.

Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz

Electrical Ratings (Vac): 24 Vac

Flame Failure Response Time (sec): 0.8 sec @ 1.0 mA flame current

Flame Sense: One Rod/Two Rods

Frequency (Hz): 60 Hz

Gas Type: LP/Natural

Ignition Source: Internal high voltage spark generator

Ignition System Type: Intermittent Pilot

- Provides ignition sequence, flame monitoring and safety shutoff for intermittent pilot central furnaces and heating appliances.
- Provides 100 percent pilot gas shutoff if pilot fails to light; after 6-minute delay, trial for ignition is repeated. Ignition trial/delay sequence is repeated until the appliance lights or call for heat is removed.
- For use with Natural or LP gas.
- For use in single rod or dual rod/remote sense applications.
- Includes relay contacts for use with any intermittent pilot gas control string with maximum 1.0A pilot or 2.0A main valve rating; Honeywell VR8204, VR8304 or VR8345M combination gas control recommended.
- Functional equivalent of S86, S8600, S8610 and S90 modules.
- Includes spark cable adapters to allow field replacement of both Honeywell and competitive controls without replacing existing spark cable.

Maximum Valve Load @ 24 Vac (Amps): 1A Pilot, 2A Main @ 165 F;
1A Pilot, 1A Main @ 175 F

Maximum Ambient Temperature Ratings: -40 F to +165 F
(-40 C to +74 C)

Typical Gas Control: VR8204, VR8304

Typical Ignition Hardware: Q345, Q3451, Q3452

Approvals: CSA Design Certified; UL Component Recognized.

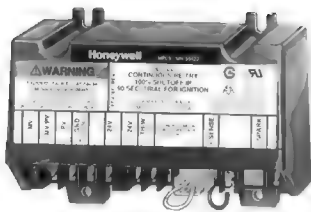
Accessories:

394800-30 CABLE ASY MDSE

394801-30 IGN CABLE ASY MDSE

	Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)	Includes
*	S8610U1003	Continuous retry [after trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot burner ignition takes place]	continuous retry	continuous retry	90 sec max.	none	Damper connection with automatic vent damper plug
* TRADELINE models • SUPER TRADELINE models							

S8620C Intermittent Pilot Module



Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)

Between Trial Time (sec): 5 minute delay after failed trial for ignition.

Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz

Electrical Ratings (Vac): 24 Vac

Flame Failure Response Time (sec): 0.8 sec @ 1.0 mA flame current

Flame Sense: Two Rod

Frequency (Hz): 60 Hz

Gas Type: LP/Natural

Ignition Source: Internal high voltage spark generator

Ignition System Type: Intermittent Pilot

Maximum Valve Load @ 24 Vac (Amps): 2A Pilot, 2A Main @ 155 F

Maximum Ambient Temperature Ratings: -40 F to +150 F
(-40 C to +74 C)

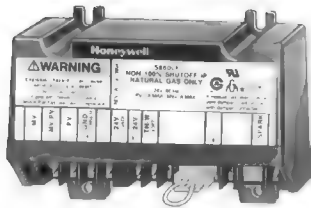
Typical Gas Control: VR8204, VR8304

Typical Ignition Hardware: Q3452

Approvals: CSA Design Certified; UL Component Recognized.

	Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)	Includes
	S8620C1003	Continuous retry [after trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot burner ignition takes place]	continuous retry	continuous retry	15 sec max.	none	—
	S8620C1011	Continuous retry [after trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot burner ignition takes place]	continuous retry	continuous retry	15 sec max.	none	Damper connection with automatic vent damper plug
* TRADELINE models • SUPER TRADELINE models							

S8680 Intermittent Pilot Module



Provide electronic control of intermittent pilot ignition systems used on gas fired furnaces, boilers, and other heating appliances.

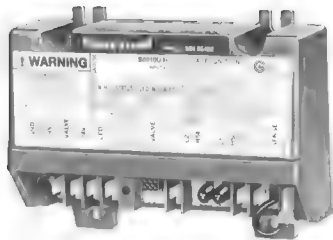
Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)

Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz
Electrical Ratings (Vac): 24 Vac
Flame Failure Response Time (sec): 0.8 sec @ 1.0 mA flame current
Flame Sense: Two Rod
Frequency (Hz): 60 Hz
Gas Type: LP/Natural
Ignition Source: Internal high voltage spark generator
Ignition System Type: Intermittent Pilot
Maximum Valve Load @ 24 Vac (Amps): 2A Pilot, 2A Main @ 155 F
Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)
Typical Gas Control: VR8204, VR8304
Typical Ignition Hardware: Q3452
Approvals: CSA Design Certified; UL Component Recognized.

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
S8680J1004	Single trial for pilot burner ignition [then shut down and lockout]	15 sec max.	1	15 sec max.	30 sec min.
* TRADELINE models • SUPER TRADELINE models					

S8910 Universal Hot Surface Ignition Module

WARNING



EXPLOSION HAZARD, CAN CAUSE INJURY OR EQUIPMENT DAMAGE.

The S8910U can be used only for direct replacement of specific installed models. Check the product specification sheet and the cross-reference before replacing an existing hot surface module with the S8910U. If the existing module is not listed, do not use the S8910U to replace it. Always use the selection tab specified in the product specification sheet for the existing module being replaced. Replacement of an unlisted module or use of a selection tab other than specified can result in appliance malfunction.

Provides operating control of a direct ignition system using a 120 Vac hot surface igniter.

- Provides easy field-replacement of a wide range of hot surface ignition modules manufactured by Honeywell, Robertshaw, and White-Rogers. Refer to the product specification sheet for specific models that can be replaced by the S8910U.
- For 120 Vac (up to 5.0A) hot surface igniter (Norton 201/271 or equivalent).

Dimensions, Approximate: 5 1/4 in. high, 4 1/16 in. wide, 1 15/16 in. long (133 mm high, 103 mm wide, 49 mm deep)

Between Trial Time (sec): (2) 96 sec- 3 trial mode only

Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz

Electrical Ratings (Vac): 24 Vac

Flame Failure Response Time (sec): 1.5 sec

Flame Sense: One Rod/Two Rods

Frequency (Hz): 60 Hz

Gas Type: LP/Natural

Ignition Source: Line Voltage (120 VAC) Hot Surface Element (Norton Model 201 or 271)

Ignition System Type: Direct Hot Surface Ignition

Maximum Valve Load @ 24 Vac (Amps): 2A

Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)

Typical Gas Control: VR8205, VR8305

Typical Ignition Hardware: Norton 201, Norton 271, Q354

Approvals: CSA Design Certified

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
• S8910U1000	The number of trials for ignition and trial time is determined by the selection tab. If a selection tab is not installed, the module will operate at four seconds trial time and one ignition trial.	4 sec or 7 sec	1 or 3	4 sec or 7 sec	32 sec
* TRADELINE models • SUPER TRADELINE models					

Gas Heating—Ignition Modules

S87 Direct Spark Ignition Modules



Provide electronic control of direct spark ignition systems used on gas fire furnaces, boilers, and other heating appliances.

- Control ignition sequence and gas control operation.
- Generate high voltage potential for main burner ignition.
- Lockout after one trial for ignition if main burner fails to ignite.
- Reset from thermostat after lockout.
- Use modules (except S87C) with any combination gas control designed for direct spark applications and rated 2.0A or less.

Dimensions, Approximate: 5 1/4 in. high, 4 1/16 in. wide, 1 15/16 in. long (133 mm high, 103 mm wide, 49 mm deep)

Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz

Electrical Ratings (Vac): 24 Vac

Flame Failure Response Time (sec): 0.8 sec @ 5.0 microamp

Flame Failure Re-ignition Time (sec): 0.8 sec max.

Flame Sense: One Rod/Two Rods

Frequency (Hz): 60 Hz

Gas Type: LP/Natural

Ignition Source: Internal high voltage spark generator

Ignition System Type: Direct Spark Ignition

Maximum Valve Load @ 24 Vac (Amps): 2A

Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)

Typical Gas Control: VR8205, VR8305

Typical Ignition Hardware: Q347A

Approvals: CSA Design Certified; UL Component Recognized.

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
S87B1008	Multiple trials for main burner ignition (then shut down and lockout)	6 sec	1	6 sec	none
S87B1016	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	1	11 sec	none
S87B1024	Multiple trials for main burner ignition (then shut down and lockout)	21 sec	1	21 sec	none
S87B1065	Multiple trials for main burner ignition (then shut down and lockout)	4 sec	1	4 sec	none
S87C1006	Multiple trials for main burner ignition (then shut down and lockout)	6 sec	1	6 sec	none
S87C1014	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	1	11 sec	none
S87C1030	Multiple trials for main burner ignition (then shut down and lockout)	21 sec	1	21 sec	none
S87D1004	Multiple trials for main burner ignition (then shut down and lockout)	6 sec	1	6 sec	none
S87D1012	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	1	11 sec	none
S87D1020	Multiple trials for main burner ignition (then shut down and lockout)	4 sec	1	4 sec	none
S87D1038	Multiple trials for main burner ignition (then shut down and lockout)	21 sec	1	21 sec	none
S87J1026	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	1	11 sec	30 sec min.
S87J1034	Multiple trials for main burner ignition (then shut down and lockout)	21 sec	1	21 sec	30 sec min.
S87K1008	Multiple trials for main burner ignition (then shut down and lockout)	4 sec	1	4 sec	30 sec min.
S87K1016	Multiple trials for main burner ignition (then shut down and lockout)	6 sec	1	6 sec	30 sec min.
S87K1032	Multiple trials for main burner ignition (then shut down and lockout)	21 sec	1	21 sec	30 sec min.

* TRADELINE models • SUPER TRADELINE models

S89C,G,H; S890 Hot Surface Ignition Module



Dimensions, Approximate: 5 1/4 in. high, 4 1/16 in. wide, 1 15/16 in. long (133 mm high, 103 mm wide, 49 mm deep)
Between Trial Time (sec): 30 sec
Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz
Electrical Ratings (Vac): 24 Vac
Flame Failure Response Time (sec): 2.0 sec @ 2.5 microamp
Flame Sense: One Rod/Two Rods
Frequency (Hz): 60 Hz
Gas Type: LP/Natural

The S89 and S890 provide operating control and system shutdown on loss of main burner flame in direct ignition central heat furnaces and heating appliances with hot surface igniter.

- S89C,G,J and S890C,G,J are for systems with a combination igniter-sensor.
- S890D,H are for systems with separate igniter and sensor.
- S89C lock out after one try for ignition.
- S89G,H and S890G,H provide three tries for ignition before lockout, with 30 sec. min. purge before second and third tries.
- S890 provides 30 sec. min. prepurge on initial trial for ignition.
- Compatible with Norton 201 and 271 or equivalent hot surface igniters.
- Available with leadwires for line voltage connections.
- Available with Molex plug for connecting D80D Vent Damper.
- Modules can be used on either natural or LP gas; they provide 100 percent shutoff of gas on lockout.
- Modules have relay contacts for use with any direct ignition gas control with max. 2.0 A, 24 Vac rating.
- Modules use rectification principle for flame sensing.
- Minus 40 F to +175 F [minus 40 C to +79 C] temperature rating.

Ignition Source: Line Voltage (120 VAC) Hot Surface Element (Norton Model 201)

Ignition System Type: Direct Hot Surface Ignition

Maximum Valve Load @ 24 Vac (Amps): 2A

Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)

Typical Gas Control: VR8205, VR8305

Approvals: CSA Design Certified; UL Component Recognized,

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
S89C1087	Single trial for main burner ignition [then shut down and lockout]	6 sec	1	6 sec	none
S89C1095	Single trial for main burner ignition [then shut down and lockout]	15 sec	1	15 sec	none
S89G1021	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	3	—	none
S89H1029	Multiple trials for main burner ignition (then shut down and lockout)	11 sec	3	—	none
S890G1011	Multiple trials for main burner ignition (then shut down and lockout)	6 sec	3	6 sec	30 sec
S890H1002	Multiple trials for main burner ignition (then shut down and lockout)	4 sec	3	4 sec	30 sec

* TRADELINE models • SUPER TRADELINE models

Gas Heating—Ignition Modules

S89E,F Direct Spark Ignition Modules



Dimensions, Approximate: 5 1/4 in. high, 4 1/16 in. wide, 1 15/16 in. long (133 mm high, 103 mm wide, 49 mm deep)
Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz
Electrical Ratings (Vac): 24 Vac
Flame Failure Response Time (sec): 2.0 sec @ 2.5 microamp
Flame Failure Re-ignition Time (sec): 0.8 sec max.
Flame Sense: Two Rod
Frequency (Hz): 60 Hz
Gas Type: LP/Natural

Provide electronic control of direct spark ignition systems, with external spark transformers, used on gas-fired furnaces, boilers, conversion burners and other heating appliances.

- Controls ignition sequence and gas control operation in direct spark ignition systems.
- Control separate 120 Vac spark generator that provides high voltage potential for main burner ignition.
- Lockout after one trial for ignition if main burner fails to ignite.
- Reset from thermostat after lockout. Use separate electrodes for spark ignition and flame sensing.
- Use any 24 Vac combination gas control designed for direct spark applications and rated at 2.0A or less.

Ignition Source: External (120 VAC powered) High Voltage Spark Generator

Ignition System Type: Direct Spark Ignition

Maximum Valve Load @ 24 Vac (Amps): 2A

Maximum Ambient Temperature Ratings: -40 F to +175 F (-40 C to +79 C)

Typical Gas Control: VR8205, VR8305

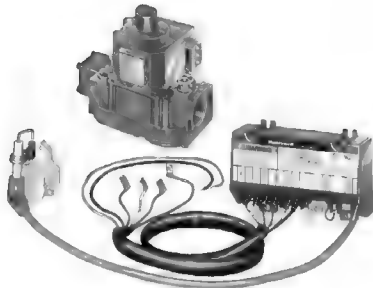
Typical Ignition Hardware: Q347, Q354

Approvals: CSA Design Certified; UL Component Recognized

Product Number	Ignition Sequence	Ignition Trial Time (sec)	Ignition Trials To Lockout	Lockout Timing	Prepurge (sec)
S89E1058	Single trial for main burner ignition [then shut down and lockout]	4 sec	1	4 sec	—
S89E1066	Single trial for main burner ignition [then shut down and lockout]	4 sec	1	4 sec	—
S89F1098	Single trial for main burner ignition [then shut down and lockout]	4 sec	1	4 sec	30 sec min.
S89F1106	Single trial for main burner ignition [then shut down and lockout]	4 sec	1	4 sec	30 sec min.

* TRADELINE models • SUPER TRADELINE models

Y8910F; Y8610U Universal Retrofit Intermittent Pilot Gas Burner Ignition Systems



Dimensions, Approximate: 3 15/16 in. high, 5 7/16 in. wide, 2 5/8 in. deep (100 mm high, 138 mm wide, 67 mm deep)
Control Voltage (Thermostat or other call for heat): 24 VAC / 60 Hz
Electrical Ratings (Vac): 24 Vac
Flame Failure Response Time (sec): 0.8 sec @ 1.0 microamp
Flame Sense: Single Rod
Frequency (Hz): 60 Hz

Complete kits converting conventional standing pilot system to intermittent pilot system. For use with 24 Vac gas-fired atmospheric furnaces, boiler and heating appliances.

- Y8610F kits are for use with natural gas only: continuous trail for ignition until the pilot lights or the system in shutdown manually
- Y8610U kits are for use with natural or LP gas: provides 100 percent pilot gas shutoff if pilot fails to light; after 6-minute delay, trial for ignition is repeated.
- Ignition trail/delay sequence is repeated until the appliance lights or call for heat is removed.

Gas Type: Natural

Ignition Source: Internal high voltage spark generator

Ignition System Type: Intermittent Pilot

Maximum Ambient Temperature Ratings: 0 F to +165 F (-18 C to +74 C)

Typical Gas Control: VR8204A

Typical Ignition Hardware: Q345, Q3451

Product Number	Ignition Sequence	Prepurge (sec)
Y8610F5003	Continuous trial for pilot ignition [no shut down or lockout]	none
Y8610U3003	Continuous retry [after trial for ignition, pilot gas shuts off for 5 minutes, then another trial for pilot ignition takes place]	none

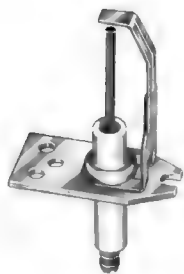
* TRADELINE models • SUPER TRADELINE models

Gas Ignition Module Accessories

OS Number	Description	Used With
197279B	Damper plug for S8610	S8610
392125-1	IGN CABLE ASSEMBLY	S87
392125-2	CABLE ASSEMBLY	S87
392125-5	CABLE ASSEMBLY	S87
392437-5	HI TEMP BOOT ENV	S87
392437-6	IGN CABLE ASY	S87
392602	ENV ASY MDSE	—
393044	Harness Assembly Packed	—
394800-30	CABLE ASY MDSE	S8610
394801-30	IGN CABLE ASY MDSE	S8610
394803-2	ENVELOPE ASSY	S8610
4074EPM	An adapter assembly for use with S8610	—

Gas Heating—Ignitors and Sensors

Q347 Spark Igniter



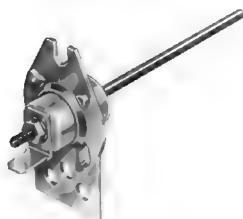
Produces spark for direct ignition of main burner.

- Includes inner Kanthal electrode with ceramic insulator, bracket and Kanthal ground strap.
- Use with S87C, D, K; S89E,F and Q354A.

Ignitor Sensor Combination: Ignitor Only

Product Number	Mounting Bracket	Mounting Bracket		Length		Rod Angle
		(inch)	(mm)	(inch)	(mm)	
Q347A1004	Bracket Style D	One 3/16 in. slot, three 3/16 in. untapped screw holes.	One 5 mm slot, three 5 mm untapped screw holes.	2 1/32 in.	52 mm	standard orientation
Q347A1012	Bracket Style D	One 3/16 in. slot, three 3/16 in. untapped screw holes.	One 5 mm slot, three 5 mm untapped screw holes.	2 1/32 in.	52 mm	90½ angle
* TRADELINE models • SUPER TRADELINE models						

Q354 Flame Rectification Sensor



Detects the presence of main burner flame.

- Includes Kanthal rod supported by ceramic insulator and mounting bracket.
- Use with S825, S87C,D,K or S89E,F.

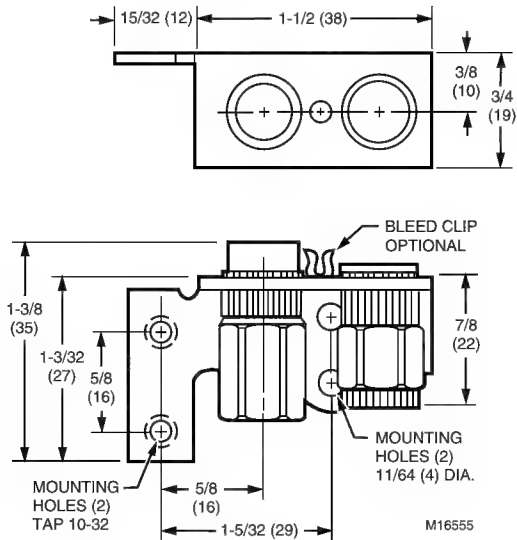
Ignitor Sensor Combination: Sensor Only

Product Number	Mounting Bracket	Mounting Bracket		Length		Rod Angle
		(inch)	(mm)	(inch)	(mm)	
Q354A1000	standard	One 3/16 in. slot, three 3/16 in. untapped screw holes.	One 5 mm slot, three 5 mm untapped screw holes.	2 1/2 in.	64 mm	straight
Q354A1018	standard	One 3/16 in. slot, three 3/16 in. untapped screw holes.	One 5 mm slot, three 5 mm untapped screw holes.	6 in.	152 mm	straight
* TRADELINE models • SUPER TRADELINE models						

Q314 Pilot Burner

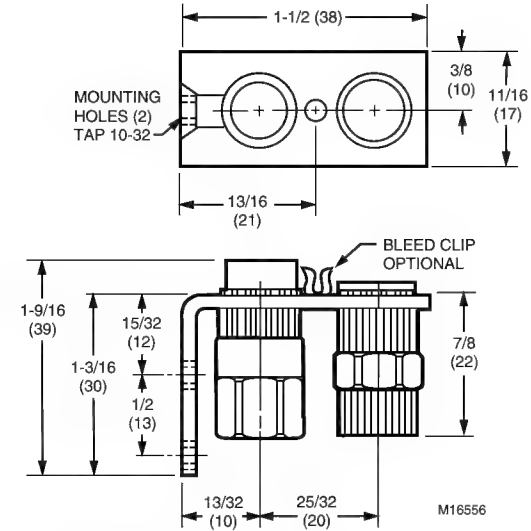


Dimension Diagrams



Nonprimary-aerated, insert orifice type pilot burner for main burner ignition with Q340 or Q390 Thermocouple for Pilotstat safety control operation.

- Use with Q313 Thermopile Generator for 750 mV powerpile applications.



Compression Fitting Length: 1/4 in.

Compression Fitting Size: 1/4 in.

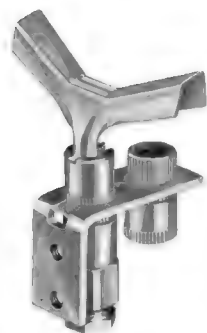
Approvals: IAS; File No. L2025001

Product Number	Direction O(F) Front Tip	Mounting Bracket	Orifice	Tip Style	Description	Includes
Q314A3513	(F) Front	A	BCR-18	Single	Pilot Burner	1/4 in. CC inlet fitting
Q314A3547	(L) Left	A	BCR-18	Single	Pilot Burner	1/4 in. CC inlet fitting
Q314A3729	(K) Right	B	BCR-18	Single	Pilot Burner	1/4 in. CC inlet fitting
• Q314A4586	(F) Front	B	BCR-18	Single	Pilot Burner	1/4 In. CC Inlet Fitting; Special Mounting Bracket With Screws For Converting "B" Bracket To "A"; And Lp Orifice
* Q314A6094	(L) Left	B	BCR-18	Single	Pilot Burner	1/4 In. CC Inlet Fitting; Special Mounting Bracket With Screws For Converting "B" Bracket To "A"
* Q314A6102	(K) Right	B	BCR-18	Single	Pilot Burner	1/4 In. CC Inlet Fitting; Special Mounting Bracket With Screws For Converting "B" Bracket To "A"

* TRADELINE models • SUPER TRADELINE models

Gas Heating—Pilot Burners

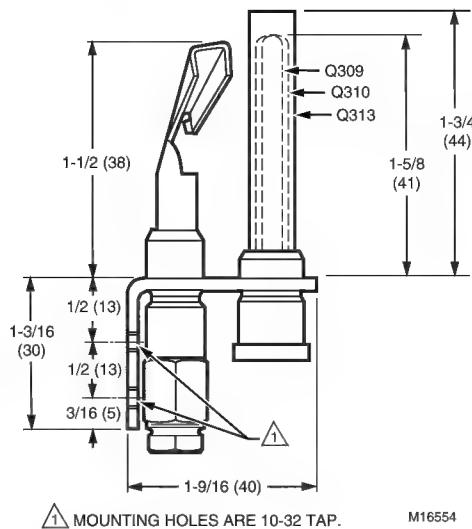
Q327 Pilot Burner



Primary-aerated, spud orifice-type pilot burner for main burner ignition with Q340 or Q390 Thermocouple for Pilotstat safety control operation.

- Use with Q313 Thermopile Generator for 750 mV powerpile applications.

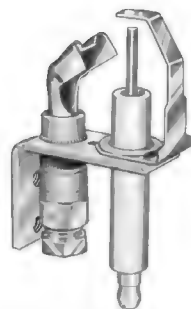
Dimension Diagram



Compression Fitting Length: 1 1/4 in.
Approvals: IAS; File No. L2025001

	Product Number	Mounting Bracket	Tip Style	Description	Includes
*	Q327A1626	B	Batwing	Pilot Burner	Natural Gas Orifice, Lp Gas Orifice, 1/4 In. CC Inlet Fitting
* TRADELINE models • SUPER TRADELINE models					

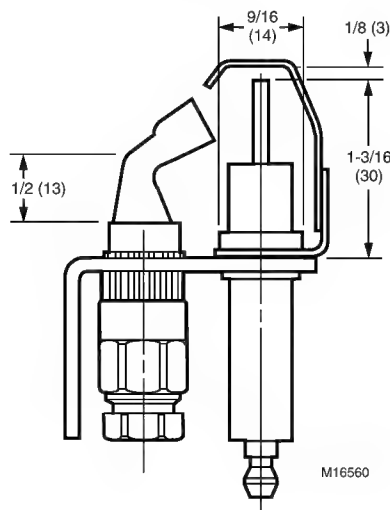
Q345 Igniter-Burner



Nonprimary-aerated combination pilot burner and igniter. Used with the S86, S860, S8610, or S8670 in intermittent pilot systems.

- Includes pilot burner with bracket, ceramic-insulated Kanthal flame rod/spark igniter and ground strap.

Dimension Diagram



Compression Fitting Length: 1 1/4 in.
Temperature Ratings Leadwires (C): (Max. at electrode tip: 968 C)

	Product Number	Direction of Front Tip	Mounting Bracket	Orifice	Tip Style	Includes
*	Q345A1305	(F) Front	B	BCR-18	Single	1/4 in. cc inlet fitting and mounting adapter
*	Q345A1313	(L) Left	B	BCR-18	Single	1/4 in. cc inlet fitting and mounting adapter
*	Q345A1321	(K) Right	B	BCR-18	Single	1/4 in. cc inlet fitting and mounting adapter
* TRADELINE models • SUPER TRADELINE models						

Q377; Q379; Q382 Piezo Pilot Burners



These pilot burners are equipped with a piezo electrode assembly. They are ideal for use with any millivolt pilot gas valve (such as the VS8510 and VS8520) in fireplace and space heating applications.

- Q379 are non-primary aerated, insert orifice pilot burners. Q382 is primary aerated with an insert orifice.
- Variety of mounting brackets available.
- Variety of tip styles to provide desired flame pattern.

	Product Number	Direction O(F) Front Tip	Mounting Bracket	Orifice	Pilot Btuh	Tip Style	Description
	Q377A1019	(L) Left	A	0.012	500	Single	Pilot Burner
	Q377A1027	(L) Left	A	0.009	500	Single	Pilot Burner
	Q379A1015	(L) Left	A	0.018	1000	Single	Pilot Burner
	Q382B1000	DUAL WING	B	0.02	1250	Batwing	Pilot Burner
	Q382B1026	DUAL WING	B	.020 in.			Pilot Burner
* TRADELINE models • SUPER TRADELINE models							

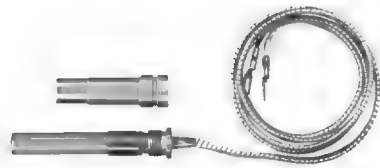
Pilot Burner Parts and Accessories

OS Number	Description	Used With
386449	1/4 in. Compression Fitting, 0.65 in total overall length	Igniter Kit
392449	Compression Connection Mdse.	1/4 in. Compression Fitting, 0.65 in total overall length
386449-1	1/4 in. Compression Fitting, 0.78 in total overall length	Compression Connection Mdse.
386449-4	1/4 in. Compression Fitting, 1.15 in. total length	1/4 in. Compression Fitting, 0.78 in total overall length
388146AG	Natural Gas Orifice for Q327 Pilot Burner. Orifice is stamped: A 26	1/4 in. Compression Fitting, 1.15 in. total length Q327
388146KP	LP Orifice for Q348 and Q3480 Pilot Burners. Orifice is stamped: KR 14	Q327, Q348, Q3480
388146KR	LP Orifice for Q327 Pilot Burner. Orifice stamped: K14	Q3480, Q327
388146NE	Natural Gas Orifice for Q348 and Q3480 Pilot Burners. Orifice stamped: N22	Q327
388468D	LP Orifice for Q324 Pilot Burners. Orifice stamped: N10	Natural Gas Orifice for Q348 and Q3480 Pilot Burners. Orifice stamped: N22, Q324
388468H	LP Orifice for Q324 Pilot Burners. Orifice stamped: N18	Q324, Q324
390686-1	LP Orifice for Q314, Q345, Q3450, Q3451, Q3452 Pilot Burners. Orifice stamped: BBR10	Q324, Q314, Q345, Q3450, Q3451, Q3452
390686-15	0.09 Pilot Orifice	Q3452
390686-23	0.008 LP Pilot Orifice	0.09 Pilot Orifice
390686-25	0.012P Pilot Orifice	0.008 LP Pilot Orifice
390686-36	LP Orifice for Q314, Q345, Q3450, Q3451, Q3452 Pilot Burners. Orifice stamped: BBR11	0.012P Pilot Orifice, Q314, Q345, Q3450, Q3451, Q3452
390686-4	Natural Gas Orifice for Q314, Q345, Q382, Q3450, Q3451, Q3452 pilots burners. Orifice stamped: BCR18	Q3452, Q314, Q345, Q3450, Q3451, Q3452, Q382
390686-5	Natural Gas Orifice for Q314, Q345, Q382, Q3450, Q3451, Q3452 pilot burners. Orifice stamped: BCR20	Q382, Q314, Q345, Q3450, Q3451, Q3452, Q382
390686-6	0.022 Pilot Orifice	Q382
390686-8	0.024 Pilot Orifice	0.022 Pilot Orifice
390686-9	0.024 Pilot Orifice	0.024 Pilot Orifice
391959A1	BBR10, Replacement Orifice Assembly 388146AA (all)	0.024 Pilot Orifice
391959A2	BCR18, Replacement Orifice Assembly 344146AC (A18)	BBR10, Replacement Orifice Assembly 388146AA (all)
391959A3	Replacement Orifice Assembly	BCR18, Replacement Orifice Assembly 344146AC (A18)
391959A4	CAR24, Replacement Orifice Assembly 388146AC (A18)	Replacement Orifice Assembly

Gas Heating—Pilot Burners

OS Number	Description	Used With
391959A6	BCR26, Replacement Orifice Assembly 388146AG (A26)	CAR24, Replacement Orifice Assembly 388146AC (A18)
391959C1	Replacement Orifice Assembly	BCR26, Replacement Orifice Assembly 388146AG (A26)
391996A	Compression Elbow Assembly	Replacement Orifice Assembly
392231A1	BBR10, Replacement Inlet Fitting Orifice 388468A	Compression Elbow Assembly
392231A2	BCR18, Replacement Inlet Fitting Orifice 388468J	
392417	Carrier V 86 Adapter Kit	
392431	Igniter Kit	
392449-1	0.78 in. Y8 Compression Fitting	
392449-4	1/4 in. Compression Fitting 1.15 in. total length	
136084	Jumper Lead Assembly	W720
136714	Fuse	
388146AE	Orifice Assembly	
390251A	Orifice	—
390680-7	Pack Adaptor	—
391959A5	Replacement Orifice Assembly	—
394381-2	Orifice Assembly	—
Q3400A1024	Igniter Flame Rod Assembly for Q3450/Q3480	Q3450/Q3480

Q313 Replacement Thermopile Generators



Provide power for a millivoltage, self-powered control system.

- Eliminate the need for an outside power source.
- Easy push-in installation.
- Include spade terminals.
- Individually skinpacked; each unit ordered represents one thermopile generator.

Connections To Valves: Spade Terminals

Open Circuit Output (mV): 600 mV to 750 mV

Voltage (mV): 750 mV

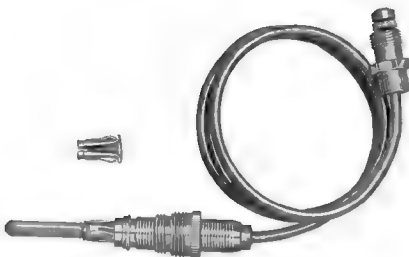
Temperature Ratings Hot Junction: 1400 F (760 C)

Temperature Ratings Cold Junction: 780 F (416 C)

	Product Number	Lead Length		Resistance	Product Used With	Includes
		(inch)	(mm)			
	Q313A1022	35 in.	889 mm	2.89 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	—
	Q313A1055	47 in.	1194 mm	2.90 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	1/2 in. thermopile attaching nut.
	Q313A1105	75 in.	1905 mm	—	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	1/2 in. thermopile attaching nut.
*	Q313A1139	35 in.	889 mm	2.89 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	push-in clip
*	Q313A1170	35 in.	889 mm	2.89 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	PG9 adapter (part no.393948)
*	Q313A1188	35 in.	889 mm	2.89 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	push-in clip, 1/2 in. thermopile attaching nut.
	Q313B1005	35 in.	889 mm	2.89 ohm	Q314, Q324, Q327, Q377, Q379, Q382 Pilot Burners	Includes junction box for series hook up with high limit switch.

* TRADELINE models • SUPER TRADELINE models

Q340 Universal 30 mV Thermocouple



There is a Q340 for every gas-fired heating system application.

- Replace almost any 30 mV thermocouple.
- Average operating life of ten years.
- Add the 392451-1 or 393200-1 ECO Adapter to hook up a high limit switch in series with the thermocouple.
- Available in a variety of lead lengths—18 to 48 in. (0.5 to 1.2 mm).

Connections To Valves: 11/32 32 Male Connector Nut

Open Circuit Output (mV): 26 μ V to 32 μ V

Voltage (mV): 30 mV

Temperature Ratings Hot Junction: 1400 F (760 C)

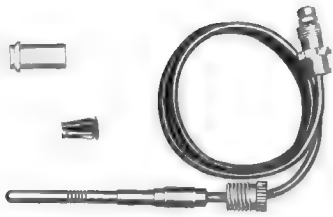
Temperature Ratings Cold Junction: 780 F (416 C)

	Product Number	Lead Length		Resistance	Includes
		(inch)	(mm)		
*	Q340A1066	18 in.	457 mm	0.02 ohm	Adapter and Push In Clip
•	Q340A1074	24 in.	610 mm	0.02 ohm	Adapter and Push In Clip
*	Q340A1082	30 in.	762 mm	0.02 ohm	Adapter and Push In Clip
•	Q340A1090	36 in.	914 mm	0.02 ohm	Adapter and Push In Clip
*	Q340A1108	48 in.	1219 mm	0.03 ohm	Adapter and Push In Clip
	Q340A1512	18 to 48 in.	457 to 1219 mm	0.02 ohm	Adapter and Push In Clip
	Q340A1538	18 to 48 in.	457 to 1219 mm	0.02 ohm	Adapter and Push In Clip

* TRADELINE models • SUPER TRADELINE models

Thermocouples/Thermopiles

Q390 Thermocouple



For use on gas-fired heating systems.

- Bottom-lock design provides easy installation in most applications.
- Average operating life of four years.
- Universal adapter saves service time by assuring correct positioning of the thermocouple relative to the flame.
- Available in a variety of lead lengths-18 to 36 in. (457 to 914 mm).

Connections To Valves: 11/32 32 Male Connector Nut

Open Circuit Output (mV): 26 μ V to 32 μ V

Voltage (mV): 30 mV

Temperature Ratings Hot Junction: 1400 F (760 C)

Temperature Ratings Cold Junction: 780 F (416 C)

	Product Number	Lead Length		Resistance	Includes
		(inch)	(mm)		
*	Q390A1046	24 in.	610 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A1053	30 in.	762 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A1061	36 in.	914 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A1095	18 in.	457 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A1103	48 in.	1219 mm	0.03 ohm	Adapter and Push In Clip
*	Q390A5203	18 in.	457 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A5211	24 in.	610 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A5229	30 in.	762 mm	0.02 ohm	Adapter and Push In Clip
*	Q390A5237	36 in.	914 mm	0.02 ohm	Adapter and Push In Clip
* TRADELINE models • SUPER TRADELINE models					

Thermocouple and Thermopile Accessories

OS Number	Description
393948	Adapter Assembly
394530	Tester Envelope Assembly
Y540A1004	Thermocouple Package

Honeywell Offers the Most Complete Line of Central Gas Heating Valves

SELECTION GUIDE

Honeywell combination gas controls come in various models for standard capacity central heating applications, and for use on gas heating appliances. They are available for standing pilot, intermittent pilot and hot surface/direct spark systems.

COMBINATION GAS CONTROLS:

Application	Voltage	A.G.A. Certified Capacity Range ^{a, b}				
		20 to 200 cfh ^c	30 to 300 cfh ^d	30 to 415 cfh ^d	33.5 to 425 cfh	200 to 720 cfh
		(0.57 to 5.7 m ³ /hr)	(0.85 to 8.5 m ³ /hr)	(0.85 to 11.8 m ³ /hr)	(0.95 to 12.0 m ³ /hr)	(5.66 to 20.39 m ³ /hr)
Standing Pilot	24 Vac 120 Vac mV	VR8200	VR8300 VR4300		V800 V400 VS820	
Intermittent Pilot	24 Vac 120 Vac	VR8204		VR8304, VR8345 VR4304		VR8404
Hot Surface/ Direct Spark	24 Vac 120 Vac	VR8205		VR8305, VR8345 VR4305		

^aThe capacities listed are based on 1,000 Btu/ft³, 0.64 sp gr Nat. gas at 1 in. wc pressure drop (37.3 MJ/m³, 0.64 sp gr Nat. gas at 0.25 kPa pressure drop). Gas capacities are listed in cu ft per hour (m³/hr) to indicate gas flow through the valve.

^bCapacities are dependent on inlet-outlet (pipe) size. See specific product descriptions; refer to model number index for page numbers.

^cLP minimum regulation is 40,000 Btuh.

^dLP minimum regulation is 50,000 Btuh.

STANDARDIZE ON DUAL-SEATED COMBINATION GAS CONTROLS

- There are many benefits of standardizing on dual-seated controls for standing pilot system replacements.
- Assures maintenance of safety mechanisms designed into your system.
- Assures your equipment continues to meet standards and codes, effective since 1979, requiring a dual-seated control or a single-seated control with an energy cutoff (ECO).
- Upgrades single-seated controls to meet current control standards requiring dual safety shutoff.
- Reduces inventory in your shop and on the truck.
- Simplifies replacement valve selection.

NOTE: Dual-seated controls must be used as replacements in intermittent pilot and direct ignition systems in order to meet code requirements.

Two valves are better than one

"VR" prefix combination gas controls include two automatic valves for dual safety shutoff. Both valves close after every call for heat, providing double assurance for complete gas close-off. Dual-seated combination gas controls are the universal replacement for all three types of valves—dual-seated valves, single-seated valves with an ECO, and ordinary single-seated valves.

Use the matrix below to select the appropriate CGC for your specific application. For complete ordering information on specific CGCs refer to model number index for specific page numbers.

Replacement of a single-seated valve using a dual-seated valve upgrades the equipment to meet current American National Standards Institute (ANSI) codes requiring dual safety shutoff. By installing a dual-seated control you maintain or upgrade equipment to meet ANSI standards.

Gas Valve Capacity: The Usable Range of a Gas Valve

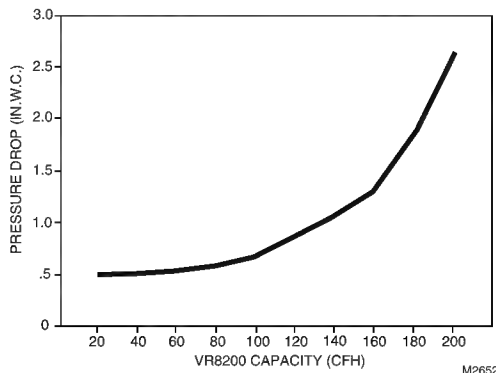
Manufacturers provide gas valve capacity information in two ways.

1. A specification sheet where capacity is given for a specific pressure drop.
2. A graph that shows a range of capacities at all pressure drops within the range of regulation.

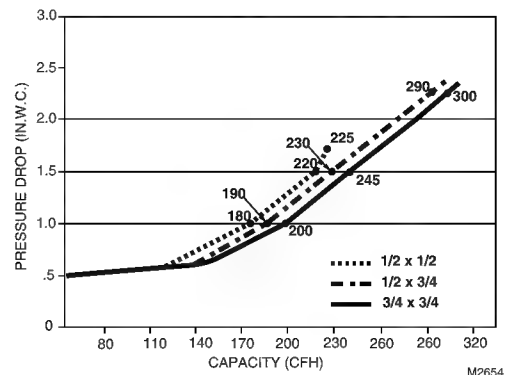
The true measure of a gas valve capacity is determined by referring to graphs showing capacity at all possible pressure drops. A gas valve maintains regulation within a "Usable Range." The Usable Range of the VR8200 Family of Gas Valves is 20,000 to 200,000 Btus; the Usable Range of the VR8300 Family of Gas Valves is 30,000 to 300,000 Btus.^a

^aCapacities based on 1,000 Btu/ft³, 0.64 sp gr natural gas at 1 in. wc pressure drop (37.3 MJ/m³, 0.64 sp gr natural gas at 0.25 kPa pressure drop).

Capacity of the VR8200 relative to pressure drop.



Capacity of the VR8300 relative to pressure drop.

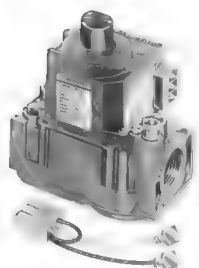


Combination Gas Controls

Honeywell Universal Gas Control Cuts Inventory and Increases Profits.

Honeywell Universal Gas Controls allow you to stock only a few controls, yet be prepared for any gas heating application.

VR8345M4302 Universal Electronic Ignition Combination Gas Control



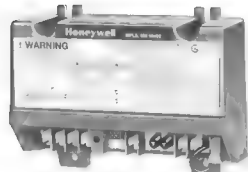
- Easy, universal application.
- For intermittent pilot, hot surface ignition and direct spark ignition applications.
- Compact size fits virtually all furnaces, boilers, space heaters, unit heaters, even pool heaters.
- Wide BTU/H capacity range (30,000 to 415,000 BTU/H natural gas).
- Includes complete adapters for any application.

S8610U1003 Universal Intermittent Pilot Module



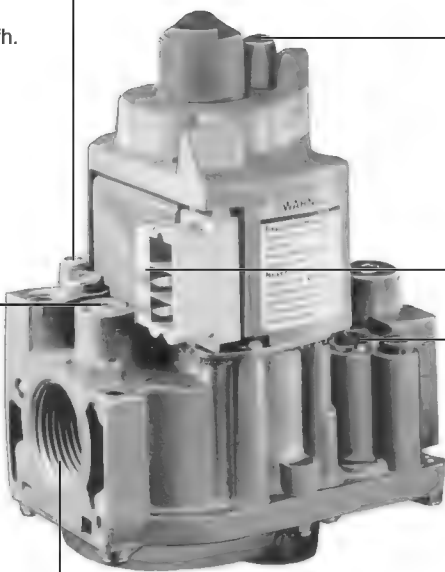
- Replaces almost 300 Honeywell and competitive intermittent pilot controls.
- For single or dual rod applications.
- 100% Shutoff and Continuous Retry.

S8910U1000 Universal Hot Surface Ignition Module



- Replaces over 100 Honeywell and competitive hot surface ignition controls.
- Includes "selector tabs" to match lockout timing, plus the number of ignition trials before lockout.
- For single or dual rod flame sensing.
- Diagnostic LED.

VR8300 Dual Valve Combination Gas Control—The Universal Replacement for Standing Pilot Applications



Pilot Adjustment Easily adjust pilot gas flow to the burner for optimum flame.

The VR8300 Measures 6-1/16 in. high x 2-11/16 in. wide x 4-1/16 in. deep, yet provides all the functions of larger, bulkier valves. Swing radius is 4 in.

Wide Capacity Range
The VR8300 can be used in applications with capacities from 30 to 300 cfh.

ECO Connection
ECO connector (P/N 393200-1). Included with Super Tradeline models, clips on to simplify reconnecting an energy cut-off.

Inlet and Outlet Pressure Taps
Top-mounted pressure taps allow easy troubleshooting of problem installations.

Easy Field Adjustments Field-adjustable controls are on top of the valve where they are easily reached.

Multipoise The VR8300 works equally well mounted at any angle from 0 to 90°.

Programmed Lighting
Built-in safeguard requires the user to hold down a red LIGHTING button while turning the gas control to PILOT. The button is inoperable if the knob is set to OFF or ON.

Clearly Marked Wiring Terminals Allow for quick, easy connections.

Pressure Regulator Adjustment Regulator screw allows adjusting gas pressure in problem installations.

Inlet Screen Mesh
Screen blocks contaminants from entering gas passages.

Inlet/Outlet Accepts Optional Flanges
Straight Flanges adapt standard 1/2 in. inlet and outlet to 3/4 in. size. Angle flanges also allow right-angle connections in 1/2 in. inlet and outlet.

M14499

V845 Combination Gas Controls

The Gas Controls combine a manual gas cock, automatic valve operator, and gas pressure regulator. A direct spark ignition system and suitable accessory controls complete the V845 control system.

Control capacity is 2500,000 Btuh natural gas. Valve body inlet pipe tapping is 1/2 inch. Outlet measurements are for straight-through 3/4 inch; for left and right 1/2 inch. One each, 3/4 to 1/2 inch and 1/2 to 3/8 inch reducer bushings are provided.

Type: Single Stage

Body Pattern: Straight through with 3/8 in. and 1/2 in. NPT side outlets

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

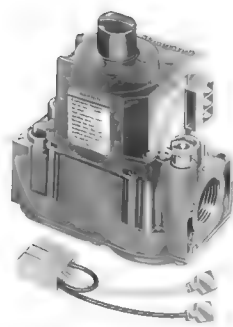
Frequency (Hz): 60 Hz

Product Number	Type of Gas	Capacity at 1 in. p.d.	Opening Characteristics (standard, step)	Mounting	Inlet/Outlet Size	Ignition Type	Pressure Regulator Setting		Temperature Ratings	
							(psi)	(kPa)	(F)	(C)
V845A1133	LP Natural	225,000 BTU/hr; 205,000 BTU/hr min.	Standard	0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.	1/2 in. x 1/2 in.	Direct Ignition	10.0 in. wc	2.49 kPa	-40 F to +175 F	-40 C to +79 C

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Universal Controls

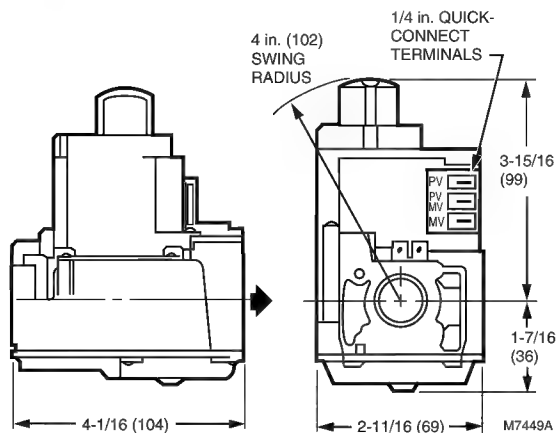
VR8345 Universal Electronic Ignition Combination Gas Control



Universal electronic ignition combination gas control for use with direct spark ignition, hot surface ignition or intermittent pilot ignition in 24 Vac, gas-fired appliances, with capacities from 30 to 415 cfh.

- Control includes manual valve, two automatic operators, pressure regulator, pilot adjustment, pilot plug and ignition adapter.
- Replaces virtually any IP, HSI, or DSI gas control.
- For use with natural or manufactured gas or LP gas. Includes converter kit to adapt from natural to LP gas.
- Compact size.
- All adjustments and wiring connections accessible from top of control.
- Four-inch swing radius allows easy rotation into position inside the tightest furnace vestibules.
- Clearly marked, keyed terminal block allows quick attachment of wires and IP/DSI/HSI jumper.
- Internal inlet screen blocks contaminants in gas line from entering valve.

Dimension Diagram



Type: Single Stage

Body Pattern: Straight-through with 3/4 in. x 3/4 in. inlets and outlets

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025007.

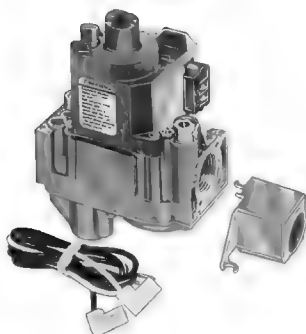
Underwriters Laboratories, Inc: UL Component Recognized.

Canadian Standards Association: CGA Design Certified: File No. L2025007.

Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Ignition Type	Pressure Regulator Setting		Temperature Ratings		Includes
					(psi)	(kPa)	(F)	(C)	
VR8345M4302	Natural	Standard	3/4 in. x 3/4 in.	Direct Ignition Intermittent Pilot	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	Two 3/4 in. x 1/2 in. NPT reducer bushings and one 1/2 in. x 3/8 in. NPT bushing.
VR8345M4336	Natural	Standard	3/4 in. x 3/4 in.	Direct Ignition Intermittent Pilot	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	Two 3/4 in. x 1/2 in. NPT reducer bushings and one 1/2 in. x 3/8 in. NPT bushing.

★ TRADELINE models • SUPER TRADELINE models

VR4300 Continuous Pilot Dual Automatic Valve Combination Gas Control



Type: Single Stage

Body Pattern: Straight through with 3/4 in. (with flange) inlet x 3/4 in. outlet

Anticipator Setting: 0.13 A

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 120 Vac

Frequency (Hz): 60 Hz

Combination gas control for use in 120 Vac, gas-fired, standing pilot appliances with capacities from 30 to 300 cfh.

- Control includes safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Compact size.
- Provides two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat, closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meets codes requiring dual safety shut-off.
- Includes natural to LP gas conversion kit.
- All adjustments, wiring connections and pilot outlet are accessible from top of control. Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025006; CGA Design Certified: File No. L2025006

Underwriters Laboratories, Inc: AGA Design Certified: File No. L2025006; CGA Design Certified: File No. L2025006

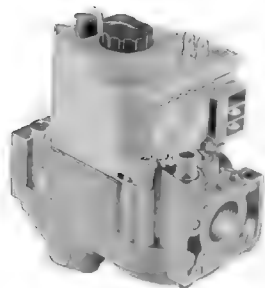
Canadian Standards Association: AGA Design Certified: File No. L2025006; CGA Design Certified: File No. L2025006

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Ignition Type	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
							(psi)	(kPa)	(F)	(C)	
*	VR4300A4508	Natural	Standard	3/4 in. x 3/4 in.	Standing Pilot	1/4 in. male quick-connects; 24 in. (610 mm) leadwire.	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	393691 Natural to LP gas conversion kit.

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Standing Pilot

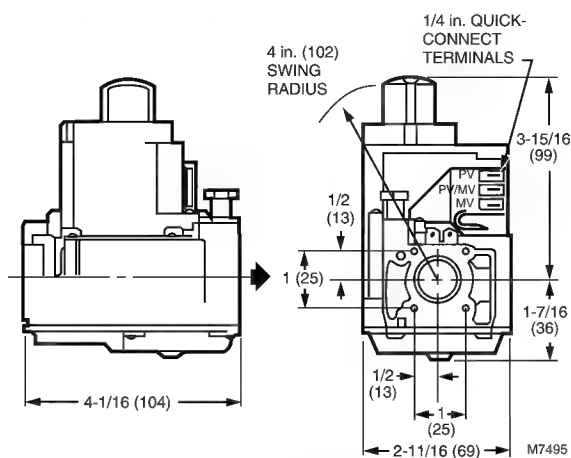
VR8200 Continuous Pilot Dual Automatic Valve Combination Gas Controls



Combination gas controls for use in 24 Vac, gas-fired, standing pilot appliances with capacities from 20 to 200 cfh.

- Controls include manual valve, two automatic operators, servo pressure regulator and pilot adjustment.
- Compact size.
- Provide two automatic valves.
- Solenoid-operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available. LITE-RITE (OFF-PILOT-ON) lighting sequence.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.

Dimension Diagram



Type: Single Stage

Body Pattern: Straight through with 1/2 in. inlets and outlets

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Ignition Type: Standing Pilot

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025006.

Underwriters Laboratories, Inc: UL Component Recognized: File No. MH5323.

Canadian Standards Association: CGA Design Certified: File No. L2025006.

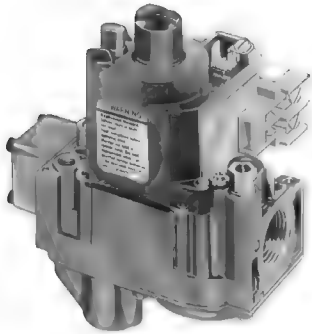
Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Includes
					(psi)	(kPa)	
• VR8200A2124	Natural	Standard	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	3.5 in. wc	0.87 kPa	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; Q340 (39 in.) thermocouple with adapters; and 393691 Natural to LP gas conversion kit.
* VR8200A2132	Natural	Standard	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	3.5 in. wc	0.87 kPa	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; and 393691 Natural to LP gas conversion kit.
* VR8200A2744	Natural	Standard	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	3.5 in. wc	0.87 kPa	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; and 393691 Natural to LP gas conversion kit; also includes 3/4 in. angle flange
VR8200C1041	Natural	Step Opening	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	—
* TRADELINE models • SUPER TRADELINE models							

Combination Gas Controls—Standing Pilot

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Includes
						(psi)	(kPa)	
	VR8200C1074	LP	Step Opening	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	step: 1.4 in. wc; full rate: 10.0 in. wc	step: 0.35 kPa; full rate: 2.5 kPa	—
	VR8200C1090	LP	Step Opening	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	step: 5.5 in. wc; full rate: 10.0 in. wc	step: 1.37 kPa; full rate: 2.5 kPa	—
*	VR8200H1251	LP	Slow Opening	1/2 in. x 1/2 in.	Combination screw and 1/4 in. male quick-connects.	3.5 in. wc	0.87 kPa	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; and 393691 Natural to LP gas conversion kit.
* TRADELINE models • SUPER TRADELINE models								

Combination Gas Controls—Standing Pilot

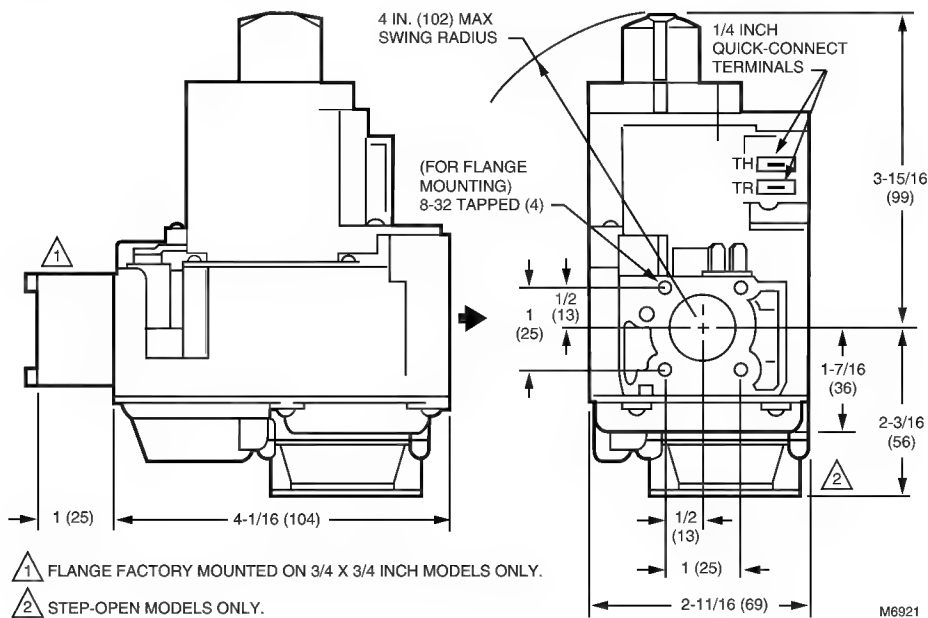
VR8300 Continuous Pilot Dual Automatic Valve Combination Gas Control



Combination gas control for use in 24 Vac, gas-fired, standing pilot appliances with capacities from 30 to 300 cfh.

- Controls include safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meets codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.

Dimension Diagram



Type: Single Stage

Dimensions, Approximate: 5 3/8 in. high, 4 1/16 in. wide, 2 11/16 in. deep (135 mm high, 104 mm wide, 69 mm deep)

Body Pattern: Straight through with integral tapping 1/2 in. x 3/4 in. inlets and outlets; with flange 3/4 in. x 3/4 in. inlets and outlets

Anticipator Setting: 0.7 A

Capacity at 1 in. p.d. (VR8300C4522 ONLY): 200,000 BTU/hr

Ignition Type: Standing Pilot

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

Temperature Ratings: 0 F to 175 F (-18 C to +79 C)

Frequency (Hz): 60 Hz

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025006.

Underwriters Laboratories, Inc: UL Component Recognized.

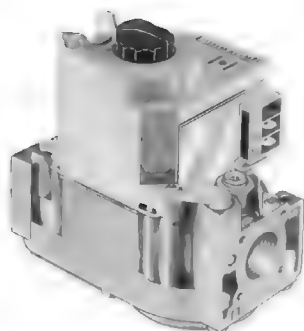
Canadian Standards Association: CGA Design Certified: File No. L2025006.

Combination Gas Controls—Standing Pilot

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Includes
						(psi)	(kPa)	
*	VR8300A3500	Natural	Standard	1/2 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	One 3/4 x 1/2 in. reducer bushing 393691 Natural to LP gas conversion kit.
•	VR8300A3518	Natural	Standard	1/2 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	One 3/4 x 1/2 in. reducer bushing 393691-14 bag assembly-3/4 in. straight flange with O ring, screws and wrench; 393200 ECO adapter; Q340 (36 in.) thermocouple with adapters; 393691 Natural to LP gas conversion kit.
	VR8300A3567	Natural	Standard	1/2 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	One 3/4 x 1/2 in. reducer bushing 393691 Natural to LP gas conversion kit.
	VR8300A3575	Natural	Standard	1/2 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	One 3/4 x 1/2 in. reducer bushing 393691-14 bag assembly-3/4 in. straight flange with O ring, screws and wrench; 393200 ECO adapter; Q340 (36 in.) thermocouple with adapters; 393691 Natural to LP gas conversion kit.
*	VR8300A4508	Natural	Standard	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	Two 3/4 x 1/2 in. reducer bushing 393691 Natural to LP gas conversion kit.
•	VR8300A4516	Natural	Standard	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	Two 3/4 x 1/2 in. reducer bushing; 393200 ECO adapter; Q340 (36 in.) thermocouple with adapters; 393691 Natural to LP gas conversion kit.
	VR8300A4557	Natural	Standard	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	Two 3/4 x 1/2 in. reducer bushing 393691 Natural to LP gas conversion kit.
	VR8300A4565	Natural	Standard	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	Two 3/4 x 1/2 in. reducer bushing; 393200 ECO adapter; Q340 (36 in.) thermocouple with adapters; 393691 Natural to LP gas conversion kit.
	VR8300C2120	Natural	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	step: 0.7 in. wc; full rate: 3.5 in. wc	step: 0.17 kPa; full rate: 0.87 kPa	—
	VR8300C4035	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 2.5 in. wc; full rate: 10.0 in. wc	step: 0.62 kPa; full rate: 2.5 kPa	—
	VR8300C4050	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 1.2 in. wc; full rate: 3.5 in. wc	step: 0.30 kPa; full rate: 0.87 kPa	—
	VR8300C4100	LP	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 1.4 in. wc; full rate: 10.0 in. wc	step: 0.35 kPa; full rate: 2.5 kPa	—
*	VR8300C4506	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	Two 3/4 x 1/2 in. reducer bushings
	VR8300C4514	LP	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 4.0 in. wc; full rate: 10.0 in. wc	2.49 kPa	Two 3/4 in. x 1/2 in. NPT reducer bushings and one 1/2 in. x 3/8 in. NPT bushing. 3/4 x 1/2 reducer bushings (2), 1/8 inch comp ftg.
	VR8300C4522	LP Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	—	—	—
	VR8300H4501	Natural	Slow Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	—
* TRADELINE models • SUPER TRADELINE models								

Combination Gas Controls—Hot Surface/Direct Spark

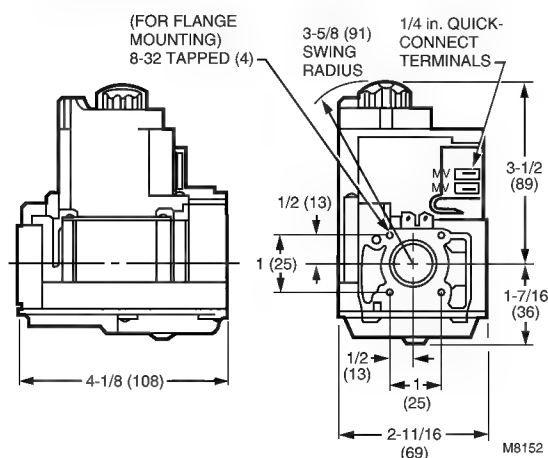
VR8205 Direct Ignition Dual Automatic Valve Combination Gas Controls



Combination gas controls for use with hot surface/direct spark systems in 24 Vac, gas-fired appliances with capacities from 20 to 200 cfh.

- Controls include manual valve, two automatic operators and servo pressure regulator.
- Compact size.
- Use with S87C,D and S89E,F Control Modules.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm operated second automatic valve opens under control of the regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available.
- Adjustments and wiring connections are accessible from top of the control.
- ON-OFF lighting sequence.

Dimension Diagram



Type: Single Stage

Body Pattern: Straight-through

Anticipator Setting: 0.5 A

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Ignition Type: Direct Ignition

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025006.

Underwriters Laboratories, Inc: UL Component Recognized.

Canadian Standards Association: CGA Design Certified: File No. L2025006.

Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
					(psi)	(kPa)	(F)	(C)	
* VR8205A2024	Natural	Standard	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; and 393691 Natural to LP gas conversion kit.
VR8205C1008	Natural	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	—
VR8205C1016	Natural	—	—	1/4 in. male quick-connects	3.5 in. wc	0.9 kPa	0 F to 175 F	-18 C to +79 C	—
VR8205C1024	—	Step Opening 1.2 in. wc step, 3.5 in. wc full rate	—	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	—
VR8205H1003	Natural	Slow Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	—
VR8205K1157	LP	—	—	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	—

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Hot Surface/Direct Spark

VR4305 Dual Standing Pilot Gas Control



Type: Single Stage

Body Pattern: Straight-through with 3/4 in. x 3/4 in. inlets and outlets

Anticipator Setting: 0.13 A

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 120 Vac

Frequency (Hz): 60 Hz

Combination gas control for use with hot surface/direct spark systems in 120 Vac, gas-fired appliances, with capacities from 30 to 415 cfh.

- Controls include manual valve, two automatic operators and pressure regulator.
- Compact size.
- Provides two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meets codes requiring dual safety shut-off.
- Includes natural to LP gas conversion kit.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- ON/OFF lighting sequence.

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025007.

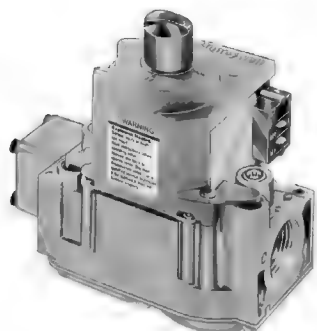
Underwriters Laboratories, Inc: UL Component Recognized.

Canadian Standards Association: CSA Design Certified: File No. L2025007.

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Ignition Type	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
							(psi)	(kPa)	(F)	(C)	
*	VR4305M4532	Natural	Standard	3/4 in. x 3/4 in.	Direct Ignition	1/4 in. male quick-connects; 24 in. (610 mm) leadwires.	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	393691 Natural to LP conversion kit; 390427 pipe bushing.
* TRADELINE models • SUPER TRADELINE models											

Combination Gas Controls—Hot Surface/Direct Spark

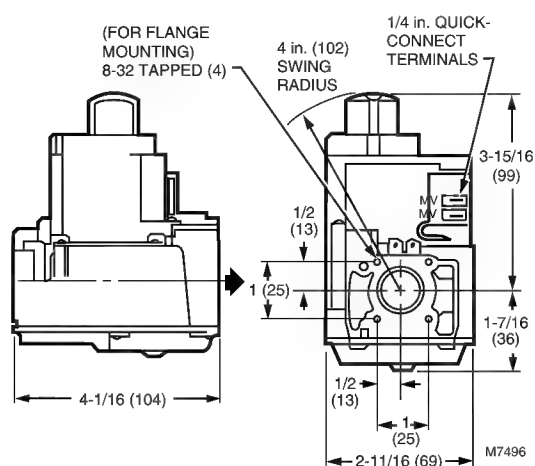
VR8305 Direct Ignition Dual Automatic Valve Combination Gas Control



Combination gas control for use with hot surface/direct spark systems in 24 Vac, gas-fired appliances, with capacities from 30 to 415 cfh.

- Controls include manual valve, two automatic operators, and pressure regulator.
- Use with S89C,E,F and S87 series 5 and later.
- Compact size.
- Provide two automatic valves.
- Solenoid-operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shut-off.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- ON-OFF lighting sequence.

Dimension Diagrams



Type: Single Stage

Body Pattern: Straight through with 1/2 in. x 3/4 in. inlets and outlets

Anticipator Setting: 0.7 A

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

Ignition Type: Direct Ignition

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025007.

Underwriters Laboratories, Inc: UL Component Recognized.

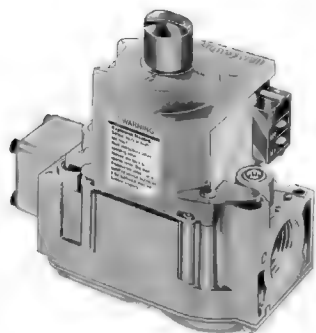
Canadian Standards Association: CGA Design Certified: File No. L2025007.

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
						(psi)	(kPa)	(F)	(C)	
*	VR8305M3506	Natural	Standard	1/2 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	393691 Natural to LP conversion kit; 390427 pipe bushing.
	VR8305P2208	Natural	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	step: 1.2 in. wc; full rate: 3.5 in. wc	step: 0.34 kPa; full rate: 0.9 kPa	-40 F to +175 F	-40 C to +79 C	—
	VR8305P2224	LP	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	step: 4.0 in. wc; full rate: 10.0 in. wc	step: 0.99 kPa; full rate: 2.5 kPa	-40 F to +175 F	-40 C to +79 C	—
	VR8305P4279	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	-40 F to +175 F	-40 C to +79 C	—
	VR8305P4295	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	—	—	-40 F to +175 F	-40 C to +79 C	—
	VR8305P4857	Natural	Step Opening	3/4 in. x 3/4 in.	1/4 in. male quick-connects	—	—	-40 F to +175 F	-40 C to +79 C	—

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Hot Surface/Direct Spark

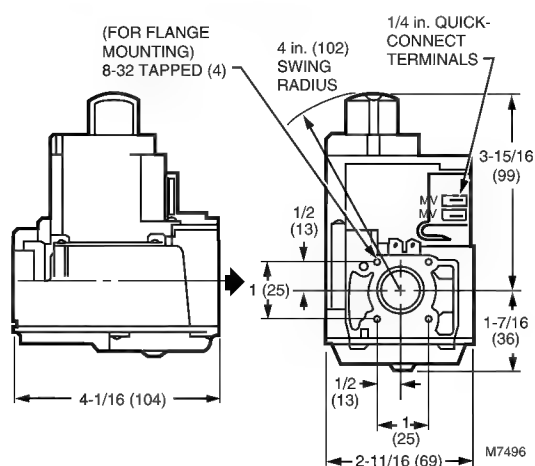
VR8305 Direct Ignition Dual Automatic Valve Combination Gas Controls



Combination gas control for use with hot surface/direct spark systems in 24 Vac, gas-fired appliances, with capacities from 30 to 415 cfh.

- Controls include manual valve, two automatic operators, and pressure regulator.
- Use with S89C,E,F and S87 series 5 and later.
- Compact size.
- Provide two automatic valves.
- Solenoid-operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shut-off.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- ON-OFF lighting sequence.

Dimension Diagrams



Type: Two Stage

Body Pattern: Straight-through with 3/4 in. x 3/4 in. inlets and outlets

Pressure Ratings: low: 1.7 in. wc; high: 3.5 in. wc (low: 0.48 kPa; high: 0.90 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Ignition Type: Direct Ignition

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025007.

Underwriters Laboratories, Inc: UL Component Recognized.

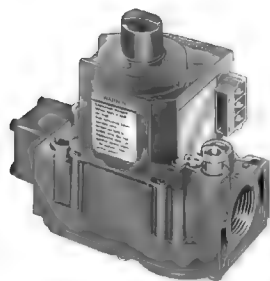
Canadian Standards Association: CGA Design Certified: File No. L2025007.

Product Number	Type of Gas	Capacity at 1 in. p.d.	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
					(psi)	(kPa)	(F)	(C)	
VR8305Q4500	Natural	300 cfh	3/4 in. x 3/4 in.	1/4 in. male quick-connects.	1/2 psi	3.5 kPa	-40 F to +175 F	-40 C to +79 C	3/4 in. to 1/2 in. reducer bushings and an LP conversion kit, part no. 396021

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Intermittent Pilot

VR4304 Intermittent Pilot Dual Automatic Valve Combinations Gas Controls



Type: Single Stage

Dimensions, Approximate: 5 3/8 in. high, 4 1/16 in. wide, 2 11/16 in. deep (135 mm high, 104 mm wide, 69 mm deep)

Body Pattern: Straight-through with 3/4 in. x 3/4 in. inlets and outlets

Anticipator Setting: 0.1 A

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 120 Vac

Ignition Type: Intermittent Pilot

Combination gas control for use in 24 Vac, gas-fired, intermittent pilot appliances with capacities from 30 to 415 cfh.

- Controls include safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Use with S86F,H; S860D; S8600F,H; S8610 and S90A,B Control Modules.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.
- ON-OFF lighting sequence.

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

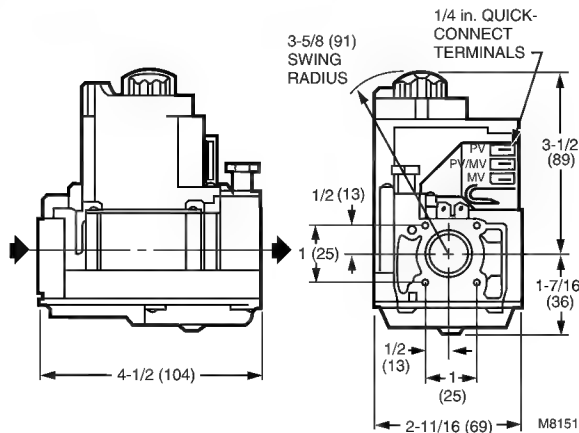
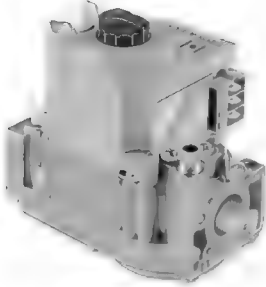
American Gas Association IAS: AGA Design Certified: File No. L2025007; CGA Design Certified: File No. L2025007

Underwriters Laboratories, Inc: AGA Design Certified: File No. L2025007; CGA Design Certified: File No. L2025007

Canadian Standards Association: AGA Design Certified: File No. L2025007; CGA Design Certified: File No. L2025007

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
						(psi)	(kPa)	(F)	(C)	
*	VR4304M4519	Natural	Standard	3/4 in. x 3/4 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	393691 Natural to LP conversion kit; 390427 pipe bushing.
* TRADELINE models • SUPER TRADELINE models										

VR8204 Intermittent Pilot Dual Automatic Valve Combination Gas Controls



Combination gas controls for use in 24 Vac, gas-fired, intermittent pilot appliances with capacities from 20 to 200 cfh.

- Controls include manual valve, two automatic operators, servo pressure regulator and pilot adjustment.
- Use with S86F,H; S8600F,H and S8610 Control Modules.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available.
- All adjustments and wiring connections are accessible from top of control.
- ON-OFF lighting sequence.

Type: Single Stage

Dimensions, Approximate: 4 15/16 in. high, 4 1/8 in. wide, 2 11/16 in. deep (125 mm high, 104 mm wide, 69 mm deep)

Body Pattern: Straight through with 1/2 in. inlets and outlets

Anticipator Setting: 0.5 A

Ignition Type: Intermittent Pilot

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025006.

Underwriters Laboratories, Inc: UL Component Recognized.

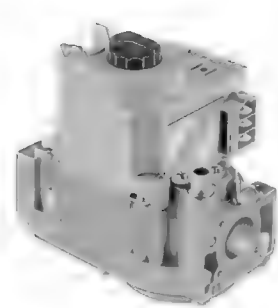
Canadian Standards Association: CSA Design Certified: File No. L2025006.

	Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Electrical Connections	Pressure Regulator Setting		Temperature Ratings		Includes
						(psi)	(kPa)	(F)	(C)	
*	VR8204A2076	Natural	Standard	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	1/2 in. x 3/8 in. reducer bushing; 393691 Natural to LP gas conversion kit.
	VR8204A2266	Natural	Standard	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	—
	VR8204C1019	Natural	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	0 F to 175 F	-18 C to +79 C	—
	VR8204C1027	Natural	Step Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	step: 1.2 in. wc; full rate: 3.5 in. wc	step: 0.30 kPa; full rate: 0.87 kPa	0 F to 175 F	-18 C to +79 C	—
	VR8204H1006	Natural	Slow Opening	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	—
*	VR8204M1091	Natural	Standard	1/2 in. x 1/2 in.	1/4 in. male quick-connects	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	1/2 x 3/8 in. reducer bushing; 39369014 bag assembly-3/4 in. straight flange with O ring, screws and wrench; and 393691 Natural to LP gas conversion kit.
	VR8204M8005	Natural	Fast Opening	1/2 in. (Left hand) x 1/2 in.	1/4 in. male quick-connects	3.4 in. wc	0.85 kPa	-40 F to +175 F	-40 C to +79 C	

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Intermittent Pilot

VR8204 Intermittent Pilot Dual Automatic Valve Combination Gas Control



The VR8204 Intermittent Pilot Dual Automatic Valve Combination Gas Controls are used in gas-fired, intermittent pilot appliances. The controls include a safety shutoff, a manual valve, two automatic operators, a pressure regulator, and a pilot adjustment screw.

Type: Single Stage

Dimensions, Approximate: 4 15/16 in. high, 4 1/8 in. wide, 2 11/16 in. deep (125 mm high, 104 mm wide, 69 mm deep)

Body Pattern: Straight through with 1/2 in. inlets and outlets

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

- VR8204 used with S8600, S8610 and S8620 Control Modules.
- VR8204 for use with 24 Vac heating appliances that burn natural or manufactured gas, or liquefied petroleum (LP) gas.
- Solenoid-operated first automatic valve opens on thermostat call for heat and closes when call for heat ends.
- Diaphragm-operated second automatic valve opens under control of the regulator and closes if gas or power supply is interrupted.
- Two-position gas control knob has ON and OFF positions.
- All adjustments and wiring connections are accessible from top of the control.
- Compact size.
- Adapters available for 3/8 or 3/4 in.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Inlet and outlet screens included.
- Pilot filter included.
- Wiring terminal block color-coded orange to indicate intermittent pilot control.
- May be installed at any angle between 0 and 90 degrees from the upright position, including vertically. 1/4 in. male quick-connect terminals for electrical connections.
- Inlet and outlet pressure taps provided; both taps accessible from top of control.

Electrical Ratings (Vac): 24 Vac

Ignition Type: Intermittent Pilot

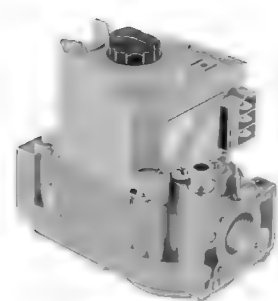
Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Product Number	Type of Gas	Capacity at 1 in. p.d.	Opening Characteristics (standard, step)	Inlet/Outlet Size	Pressure Regulator Setting		Temperature Ratings	
					(psi)	(kPa)	(F)	(C)
VR8204P1007	LP Natural	150,000 BTU/h	Step Opening	1/2 in. x 1/2 in.	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C

* TRADELINE models • SUPER TRADELINE models

VR8245 Universal Electric Ignition Gas Control



These universal electronic ignition gas controls are used in gas-fired appliances with capacities up to 150 cu ft/hour at 1 inch wc pressure drop (4.2 cu m/hour at 0.25 kPa) for natural gas. The VR8245M will operate with a direct spark (DSI), hot surface (HSI) or intermittent pilot ignition. The control includes a manual valve, two automatic operators, a pressure regulator, pilot adjustment, pilot plug and ignition adapter.

Type: Single Stage

Dimensions, Approximate: 4 15/16 in. high, 4 1/8 in. wide, 2 11/16 in. deep (125 mm high, 104 mm wide, 69 mm deep)

Body Pattern: Straight through with 1/2 in. inlets and outlets

Pressure Ratings: 1/2 psi (3.5 kPa)

Electrical Ratings (Vac): 24 Vac

Ignition Type: Intermittent Pilot

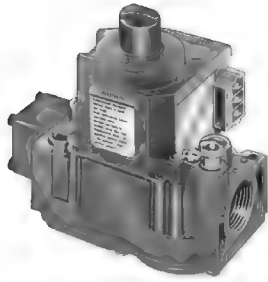
Frequency (Hz): 50 Hz, 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Product Number	Type of Gas	Capacity at 1 in. p.d.	Opening Characteristics (standard, step)	Inlet/Outlet Size	Ignition Type	Pressure Regulator Setting		Temperature Ratings	
						(psi)	(kPa)	(F)	(C)
VR8245M2530	LP Natural	150,000 BTU/h	Standard	1/2 in. x 1/2 in.	Intermittent Pilot	3.5 in. wc	0.9 kPa	-40 F to +175 F	-40 C to +79 C

* TRADELINE models • SUPER TRADELINE models

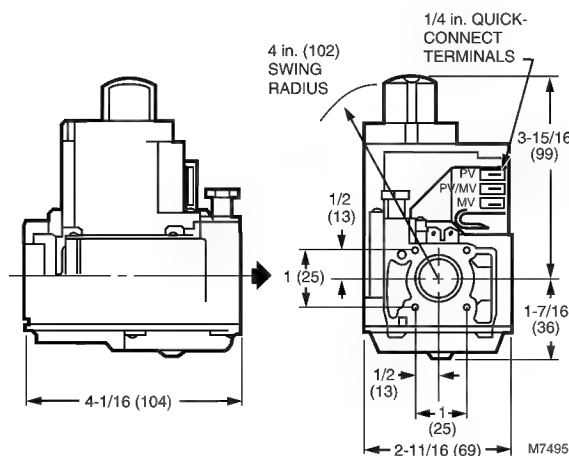
VR8304 Intermittent Pilot Dual Automatic Valve Combination Gas Control



Combination gas control for use in 24 Vac, gas-fired, intermittent pilot appliances with capacities from 30 to 415 cfh.

- Controls include safety shutoff, manual valve, two automatic operators, pressure regulator and pilot adjustment.
- Use with S86F,H; S860D; S8600F,H; S8610 and S90A,B Control Modules.
- Compact size.
- Provide two automatic valves.
- Solenoid operated first automatic valve opens on thermostat call for heat; closes when call for heat ends. Diaphragm-operated second automatic valve opens under control of regulator; closes if gas or power supply is interrupted.
- Meet codes requiring dual safety shutoff.
- Standard and slow opening natural gas models include natural to LP gas conversion kit; LP to natural gas conversion kit also available.
- All adjustments, wiring connections and pilot outlet are accessible from top of control.
- Adjustable servo regulator effectively maintains almost constant gas output pressure under wide fluctuations in gas supply pressure.
- Compatible with ECO connector.
- ON-OFF lighting sequence.

Dimension Diagram



Body Pattern: Straight-through with 3/4 in. x 3/4 in. inlets and outlets
Capacity at 1 in. p.d. (VR8304Q4511 ONLY): 300 cfh

Anticipator Setting: 0.7 A

Ignition Type: Intermittent Pilot

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Electrical Ratings (Vac): 24 Vac

Frequency (Hz): 60 Hz

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Electrical Connections: 1/4 in. male quick-connects

Approvals

American Gas Association IAS: AGA Design Certified: File No. L2025007.

Underwriters Laboratories, Inc: UL Component Recognized.

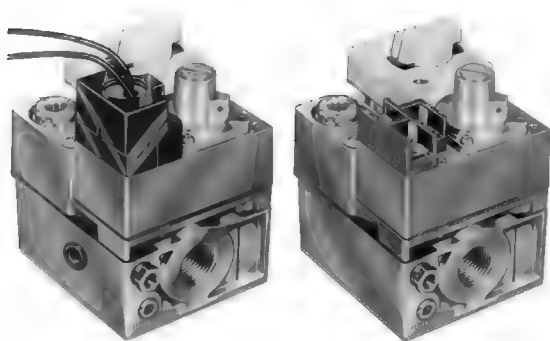
Canadian Standards Association: CGA Design Certified: File No. L2025007.

Product Number	Type of Gas	Opening Characteristics (standard, step)	Inlet/Outlet Size	Pressure Regulator Setting		Temperature Ratings		Includes
				(psi)	(kPa)	(F)	(C)	
VR8304H4503	Natural	Slow Opening	3/4 in. x 3/4 in.	3.5 in. wc	0.87 kPa	0 F to 175 F	-18 C to +79 C	393691 Natural to LP gas conversion kit.
VR8304K4814	Natural	Slow Opening	3/4 in. x 3/4 in.	4.0 in. wc	1.0 kPa	-40 F to +175 F	-40 C to +79 C	—
VR8304K4822	LP	Slow Opening	3/4 in. x 3/4 in.	10.0 in. wc	2.49 kPa	-40 F to +175 F	-40 C to +79 C	—
VR8304M2501	Natural	Standard	1/2 in. x 1/2 in.	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	393691 Natural to LP gas conversion kit.
* VR8304M3509	Natural	Standard	1/2 in. x 3/4 in.	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	One 3/4 in. x 1/2 in. reducer bushing; 393691 Natural to LP gas conversion kit.
* VR8304M4507	Natural	Standard	3/4 in. x 3/4 in.	3.5 in. wc	0.87 kPa	-40 F to +175 F	-40 C to +79 C	Two 3/4 in. x 1/2 in. reducer bushing; 393691 Natural to LP gas conversion kit.
VR8304P4330	LP	Step Opening	3/4 in. x 3/4 in.	step: 5.5 in. wc; full rate: 11.0 in. wc	step: 1.37 kPa; full rate: 2.7 kPa	-40 F to +175 F	-40 C to +79 C	—
VR8304P4504	Natural	Step Opening	3/4 in. x 3/4 in.	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	-40 F to +175 F	-40 C to +79 C	—
VR8304Q4511	Natural		3/4 in. x 3/4 in.		Two-stage: 0.43 kPa Low, 0.87 kPa High	-40 F to +175 F	-40 C to +79 C	3/4 in. to 1/2 in. reducer bushings and an LP conversion kit, part no. 396021

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Low and Line Voltage

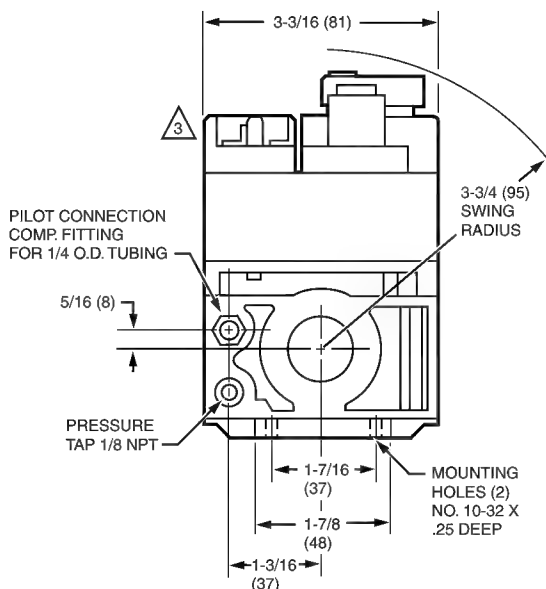
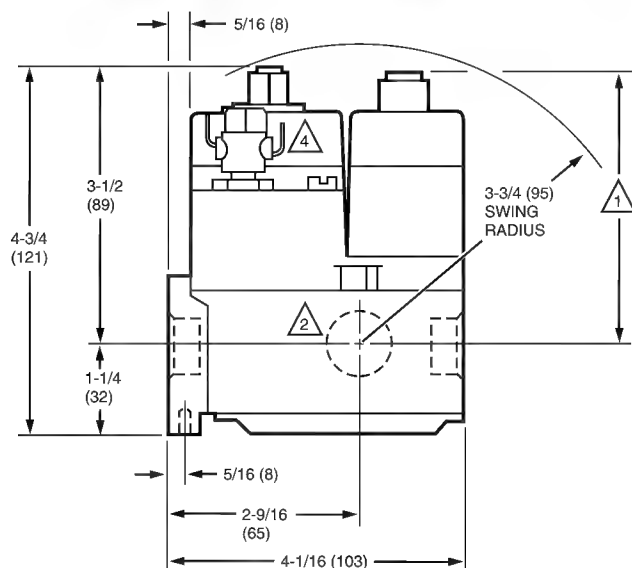
V400 Line Voltage; V800 Low Voltage Combination Gas Controls



Provide complete control of continuous pilot gas-fired central furnaces and boilers.

- Include pilot flow adjustment screw.
- Easy to install, adjust and service; all adjustments and connections are accessible from top of control.
- Add separate energy cutoff (ECO) where codes call for dual safety shutoff.
- Complete safety shutoff on pilot flame failure.
- LITE-RITE (OFF-PILOT-ON) lightning sequence.
- ECO connector for V800 models. Part No. 392451-1.

Dimension Diagram



1 WITH V5306 (ILLUSTRATED), V5307 OR 5390 PRESSURE REGULATOR: 24V MODELS—3-1/2 (89), 120V MODEL—3-5/8 (92)
MANUAL MODELS—2-13/16 (71), FOR V5308 ADD 5/8 (16) TO DIMENSIONS GIVEN.

2 SIDE OUTLETS—LEFT AND RIGHT HAND. STANDARD ONLY ON TRADELINE MODELS.

3 CONTROL WITH 24V VALVE OPERATOR SHOWN. LINE VOLT MODEL HAS COVER FOR CONDUIT CONNECTION (TOP SURFACE).

4 ECO CONNECTOR ON STANDARD CAPACITY V800 ONLY.

M16547

Type: Single Stage

Dimensions, Approximate: 4 3/4 in. high, 4 1/16 in. wide, 3 3/16 in. deep (121 mm high, 103 mm wide, 81 mm deep)

Body Pattern: Straight through, multi-tapped with 1/2 in. right and left outlets plugged

Pilot Fitting: Compression fitting for 1/4 in. OD tubing

Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: 1/8 in. NPT with plug

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Approvals

American Gas Association IAS: AGA Design Certified; File No. L2025003.

Underwriters Laboratories, Inc: UL Component Recognized.

Canadian Standards Association: CGA Design Certified; File No. L2025003.

Product Number	Type of Gas	Inlet/Outlet Size	Ignition Type	Pressure Regulator Setting		Temperature Ratings		Includes
				(psi)	(kPa)	(F)	(C)	
* V400A1046	Natural	1/2 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	One 3/4 in. x 1/2 in. and one 1/2 in. x 3/8 in. reducer bushing/adaptor.
* V400A1095	Natural	3/4 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	Two 3/4 x 1/2 in.; one 1/2 x 3/8 in. Reducer Bushings/Adaptors
V400C1036	Natural	3/4 in. x 3/4 in.	Standing Pilot	step: 0.7 in. wc; full rate: 3.5 in. wc	step: 0.17 kPa; full rate: 0.87 kPa	32 F to 175 F	0 C to 79 C	—

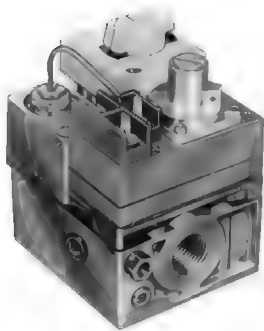
* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Low and Line Voltage

	Product Number	Type of Gas	Inlet/Outlet Size	Ignition Type	Pressure Regulator Setting		Temperature Ratings		Includes
					(psi)	(kPa)	(F)	(C)	
*	V800A1070	LP Natural	3/4 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	One 3/4 x 1/2 in. Reducer Bushings/Adapters
•	V800A1088	LP Natural	1/2 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	Two 3/4 in. x 1/2 in.; one 1/2 in. x 3/8 in. Reducer Bushings/Adapters
*	V800A1476	LP Natural	1/2 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	One 1/2 in. x 3/4 in. Reducer Bushing/ Adapter
*	V800A1591	LP Natural	3/4 in. x 3/4 in.	Standing Pilot	3.5 in. wc	0.87 kPa	32 F to 175 F	0 C to 79 C	Two 1/2 in. x 3/4 in. Reducer Bushings/ Adapters
*	V800C1052	LP Natural	3/4 in. x 3/4 in.	Standing Pilot	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa	32 F to 175 F	0 C to 79 C	Two 3/4 x 1/2 in.; one 1/2 x 3/8 in. Reducer Bushings/Adapters
* TRADELINE models • SUPER TRADELINE models									

Combination Gas Controls—Millivolt

VS820 Millivoltage Combination Gas Controls



Provide complete control of continuous pilot gas-fired central furnaces and boilers.

- Include pilot flow adjustment screw.
- Easy to install, adjust and service; all adjustments and connections are accessible from top of control.
- Add separate energy cutoff (ECO) where codes call for dual safety shutoff.
- Complete safety shutoff on pilot flame failure.
- LITE-RITE (OFF-PILOT-ON) lighting sequence.
- ECO connector for V800 models, Part No. 392451-1.

Application: Self-powered automatic control. Use with 750 mV pilot generator.

Dimensions, Approximate: 4 3/4 in. high, 4 1/16 in. wide, 3 3/16 in. deep (121 mm high, 103 mm wide, 81 mm deep)

Body Pattern: Straight-through. Multi-tapped with 1/2 in. right and left outlets plugged, except as noted.

Electrical Connections: Terminal block has 3 combination screw and 1/4 in. quick-connect terminals.

Electrical Ratings (Vac): 750 mv

Frequency (Hz): **Mounting:** 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Pilot Fitting: Compression fitting for 1/4 in. OD tubing.

Pressure Ratings: 1/2 psi (3.5 kPa)

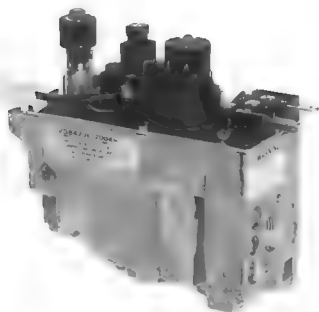
Pressure Tapping: 1/8 in. npt with plug.

Temperature Ratings: 32 F to 175 F (0 C to 79 C)

Approvals: AGA Design Certified: File no. L2025003; CGA Design Certified: File no. L2025003; UL Component Recognized

	Product Number	Type of Gas	Inlet/Outlet Size	Pressure Regulator Type	Pressure Regulator Setting	
					(psi)	(kPa)
*	VS820A1047	Natural	1/2 in. x 3/4 in. with 1/2 in. plugged side outlets.	Standard	3.5 in. wc	0.87 kPa
*	VS820A1054	Natural	3/4 in. x 3/4 in. with 1/2 in. plugged side outlets.	Standard	3.5 in. wc	0.87 kPa
*	VS820A1336	LP	3/4 in. x 3/4 in. with 1/2 in. l and r outlets.	Standard	10.0 in. wc	2.7 kPa
*	VS820C1100	Natural	3/4 in. x 3/4 in. with 1/2 in. side outlets.	Step Opening	step: 0.9 in. wc; full rate: 3.5 in. wc	step: 0.22 kPa; full rate: 0.87 kPa
* TRADELINE models • SUPER TRADELINE models						

VS8420 Millivolt Gas Valve



The VS8420 Millivolt Gas Valve is compact and has a 60,000 Btuh capacity (1 in. pressure drop for straight through configuration). The design makes it ideal for fireplace and space heating applications.

Body Pattern: Straight through

Electrical Connections: 1/4 in male quick-connect terminals

Electrical Ratings (Vac): operator: 750 mv; thermocouple: 30 mv

Mounting: 0 to 90 degrees in any direction from the upright position of the gas control knob, including vertically.

Pilot Fitting: Compression fitting for 1/4 in. OD tubing.

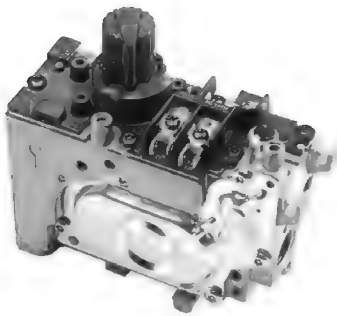
Pressure Ratings: 1/2 psi (3.5 kPa)

Pressure Tapping: **Temperature Ratings:** 0 F to 175 F (-18 C to 79 C)

Approvals: IAS Certificate: C2030022

	Product Number	Type of Gas	Inlet/Outlet Size	Pressure Regulator Type	Pressure Regulator Setting	
					(psi)	(kPa)
	VS8420E2113	LP/Natural	3/8 in. x 3/8 in.	Convertible High/Low	3.5 in. wc	
* TRADELINE models • SUPER TRADELINE models						

VS8510 Compact Millivolt Gas Valve



These compact gas valves are ideal for residential space heaters, mobile homes, fireplaces, fireplace inserts, logsets and free-standing stoves.

- Adjustable Hi/Lo regulator feature for fireplaces, logsets, and free-standing stoves (optional).
- Can be mounted in any position except upside down.
- Replacement for Robertshaw, SIT and General Control gas valves up to 60,000 Btuh (at 1 in. wc pressure drop); maximum regulation capacity 100,000 Btuh.

Application: Standing pilot

Electrical Ratings (Vac): 750 mv

Pressure Tapping: european style inlets and outlets.

Temperature Ratings: 0 F to 175 F (-18 C to +79 C)

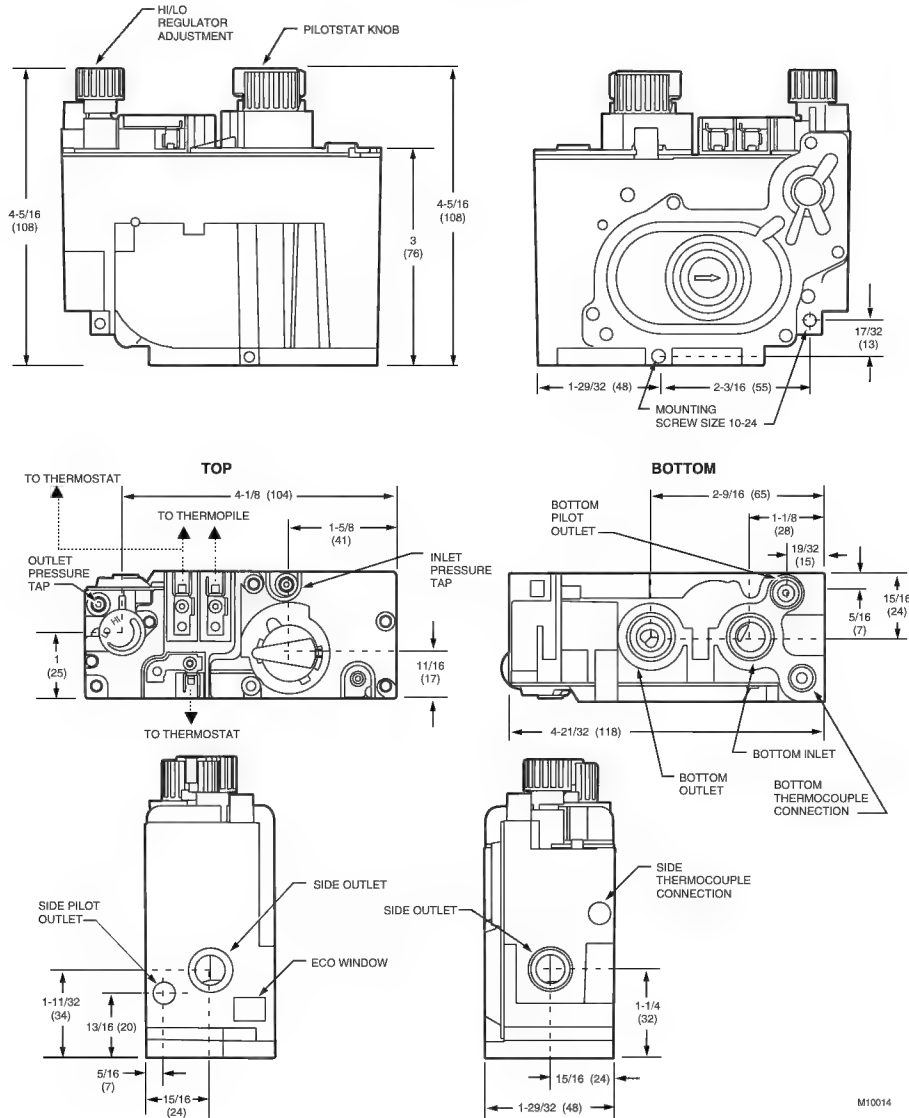
Approvals: IAS Certificate: C2030022

Product Number	Type of Gas	Inlet/Outlet Size	Pressure Regulator Type	Pressure Regulator Setting	
				(psi)	(kPa)
VS8510A9001	Natural	3/8 in. x 3/8 in.	Standard	3.5 in. wc	0.87 kPa

* TRADELINE models • SUPER TRADELINE models

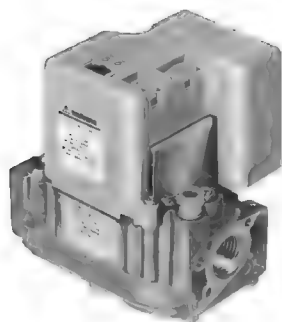
Dimension Diagram

VS8510 - HI/LO MODEL
Dimensions in in. (mm).



Combination Gas Controls—Smart Valves

SV9501; SV9502 SmartValve™ System



Combines gas flow control and electronic intermittent pilot sequencing functions into a single unit.

- Suitable for a wide range of gas-fired appliances including residential furnaces, roof-top furnaces, residential boilers, unit heaters, infrared heaters, space heaters and commercial cooking units.
- Replaces SV9500, SV9501 and SV9502 controls as noted below. Ignition sequence includes timed trial for ignition.

Type of Gas: Natural

Maximum Ambient Temperature Rating: -40 F to +175 F
(-40 C to +79 C)

Body Pattern: Straight-through

Maximum Capacity: 200 ft³/hr (5.7 m³/hr)

Maximum Capacity: 20 ft³/hr (0.6 m³/hr)

Maximum Capacity at 1 in. P.D. 150 ft³/hr (4.2 m³/hr)

Pilot Gas Outlet: Yes

Electrical Ratings (Vac): 24 Vac

Flame Failure Response Time (sec): 1.6 sec @ 3 μ A

Flame Sense: Electrode

Ignition Sequence: Intermittent Pilot

Ignition Source: Pilot

Ignition System Type: Intermittent Hot Surface Pilot Ignition

Ignition Trial Time (sec): 90 sec

Ignition Trials To Lockout: continuous retry

Lockout Timing: none

Power Supply (Vac): Frequency (Hz): 50/60 Hz

Typical Ignition Hardware: Q3450

Approvals

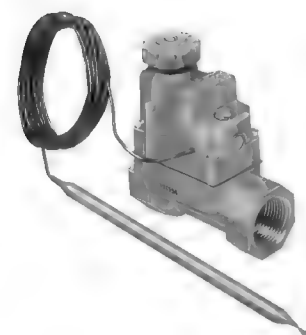
Canadian Standards Association: Design Certified

Product Number	Opening Characteristics (standard, step)	Inlet/Outlet Size (in.)	Pressure Ratings		Pressure Regulator Setting		Prepurge (sec)
			(psi)	(kPa)	(psi)	(kPa)	
SV9501M2528	Standard Opening	1/2 in. NPT x 1/2 in. NPT	1/2 psi	3.45 kPa	3.5 in. wc	0.87 kPa	none
SV9501M8129	Standard Opening	1/2 in. NPT x 1/2 in. NPT	1/2 psi	3.45 kPa	3.4 in. wc	0.87 kPa	none
SV9502H2522	Slow Opening	1/2 in. NPT x 1/2 in. NPT	1/2 psi	3.45 kPa	3.2 in. wc	0.80 kPa	15 sec

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Thermostatic Valves

V5155 Thermostatic Gas Valve



Modusnap valves used on heaters, furnaces, and hot water boilers.

- V5155A snaps open to minimum flame, then modulates in proportion to heating demand. Snaps closed if minimum flame exceeds heat load.
- V5155B modulates from minimum flame in proportion to heating demand.
- Require second valve if complete shutoff is required.
- Adjustable minimum-rate orifice screw.

Dimensions, Approximate: 4 1/16 in. high, 2 in. wide, 2 7/8 in. deep (103.2 mm high, 50.8 mm wide, 73 mm deep)

Body Pattern: Straight-through

Pressure Ratings: 1/2 psi (3.5 kPa)

Approvals

Canadian Standards Association: Design Certified: File No. L2025002

Underwriters Laboratories, Inc: UL Component Recognized

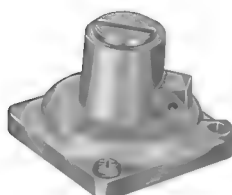
Accessories:

Q100B1006 Linkage- Connects Modutrol motor to V51E Butterfly Valve.

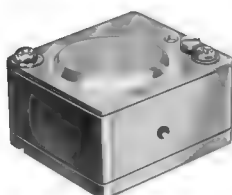
Product Number	Type of Gas	Inlet/Outlet Size	Bulb Size		Capillary Length		Temperature Range	
			(inch)	(mm)	(inch)	(mm)	(F)	(C)
* V5155A1110	Suitable for all gases	1/2 in. x 1/2 in.	3.0 in.	76.0 mm	54 in.	1.4 m	120 F to 240 F	49 C to 116 C
V5155A1375	Suitable for all gases	1/2 in. x 1/2 in.	11.0 in.	279.5 mm	123 in.	3.5 m	60 F to 100 F	16 C to 38 C
* V5155A2217	Suitable for all gases	1 in. x 1 in.	9.0 in.	228.5 mm	123 in.	3.5 m	60 F to 100 F	16 C to 38 C
* V5155A2225	Suitable for all gases	1 in. x 1 in.	3.5 in.	89.0 mm	123 in.	3.5 m	75 F to 200 F	24 C to 93 C
* V5155A2233	Suitable for all gases	1 in. x 1 in.	3.5 in.	89.0 mm	123 in.	3.5 m	120 F to 240 F	49 C to 116 C
V5155B1076	Suitable for all gases	1 in. x 1 in.	3.5 in.	89.0 mm	72 in.	1.8 m	60 F to 180 F	16 C to 82 C

* TRADELINE models • SUPER TRADELINE models

V5306; V5307 Pressure Regulator



V5306



V5307

Servo gas pressure regulator for add-on or replacement use on Honeywell V400, V800, VR400, VR800 and VR8440 Combination gas controls. Utilizing the servo principle of operation, it controls burner manifold pressure by repositioning the main valve diaphragm.

- Interchangeable and adapt to all pipe sizes and capacities.
- Mount on top surface of control.
- Installation and adjustment readily accomplished with a screwdriver.

Mounting: Top surface of combination gas control (two mounting screws and a gasket).

Pressure Ratings: 1/2 psi (3.5 kPa)






Temperature Range: -40 F to +175 F (-40 C to +79 C)

Product Number	Type of Gas	Regulator Setting	Opening Characteristics (standard, step)
* V5306B1009	Natural Gas	3.5 in. wc; adj. range 3-5 in. wc	Standard
V5307A1216	Natural Gas	4.0 in. wc; adj. range 3-5 in. wc; non-adj. step set 0.6 in. wc	Step Opening
V5307B1156	Natural Gas	4.0 in. wc; adj. range 3-5 in. wc; non-adj. step set 0.9 in. wc	Step Opening
V5307B1222	LP	11.0 in. wc; adj. range 8-12 in. wc; non-adj. step set 4.5 in. wc	Step Opening

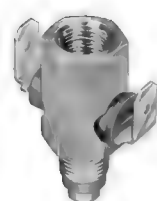

* TRADELINE models • SUPER TRADELINE models

Combination Gas Controls—Accessories

Parts and Accessories for Combination Gas Controls

OS Number	Description	Application	Used With	
386449	Compression fitting for 1/4 inch OD pilot tubing, 0.65 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	
391936	LP to Natural Gas Conversion kit, including regulator spring, O-ring, screw and cap	Conversion Kit	LV800, VS820, VS821	
391937	Natural Gas to LP Conversion kit, including regulator spring, O-ring, screw and cap	Conversion Kit	V800, VS820, VS821	
392449	Compression fitting for 1/8 inch OD pilot tubing, 0.65 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	
392877	1/4 inch barbed vent fitting	Vent Fittings	All VR8XXX, VR4XXX, SV8XXX, except VR8205S,T	
393691	Natural Gas to LP Conversion kit, including regulator spring, screw and cap	Conversion Kit	All single-stage VR8XXX, VR4XXX, SV9XXX, except VR8205S,T	
394537	1/8 inch barbed vent fitting	Vent Fittings	All VR8XXX, VR4XXX, SV8XXX, except VR8205S,T	
394588	LP to Natural Gas Conversion kit, including regulator spring, screw and cap	Conversion Kit	All single-stage VR8XXX, VR4XXX, SV9XXX, except VR8205S,T	
395466	Envelope Assembly with a Flame Current Test Kit, test lead assembly and instruction sheet	Flame Current Test Kit	Envelope Assembly with a Flame Current Test Kit, test lead assembly and instruction sheet SV9500, SV9501, SV9502	
396085	Harness bag assembly kit, includes Input voltage test harness for SV9500 and SV9501, instruction sheet, and pin harness assembly	Harness Bag Assembly Kit	All SV9XXX	
386449-1	Compression fitting for 1/4 inch OD pilot tubing, 0.78 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	
386449-4	Compression fitting for 1/4 inch OD pilot tubing, 1.15 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	
390427A	3/4 inch x 1/2 inch reducer bushing for valves	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
390427B	1/2 inch x 3/8 inch reducer bushing for valves	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
390427D	Envelope Assembly, includes one each of 3/4 inch x 1/2 inch, 1/2 inch x 3/8 inch, 3/4 inch x 3/8 inch reducer bushing	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
390427G	Envelope Assembly, includes two 3/4 inch x 1/2 inch reducer bushings and one 1/2 inch x 3/8 inch reducer bushing	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
390427H	Envelope Assembly, includes two 1 inch x 3/4 inch reducer bushings	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
390427L	Envelope Assembly, includes two 3/4 inch x 1/2 inch reducer bushings, one 1/2 inch x 3/8 inch reducer bushings and one 1/4 inch compression fitting	Reducer Bushings for Valves	All Honeywell Combination Gas Controls	
392449-1	Compression fitting for 1/8 inch OD pilot tubing, 0.78 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	
392449-4	Compression fitting for 1/8 inch OD pilot tubing, 1.15 inch total overall length	Compression Fittings	All Honeywell Combination Gas Controls	

Combination Gas Controls—Accessories

OS Number	Description	Application	Used With	
392451-1	ECO (energy cutoff) connector for 1/4 inch (6 mm) quick-connects	ECO Connector	V800, VS820, VS821	
393200-1	ECO connector bag assembly, includes ECO adapter with 1/4 inch (6 mm) quick-connects	ECO Connector	VR8200, VR8300, VR4200, VR4300	
393690-11	Flange Kit bag assembly, includes 3/8 inch straight flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	
393690-12	Flange Kit bag assembly, includes 3/8 inch angle flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	
393690-13	Flange Kit bag assembly, includes 1/2 inch angle flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	
393690-14	Flange Kit bag assembly, includes 3/4 inch straight flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	
393690-15	Flange Kit bag assembly, includes 3/4 inch angle flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	
393690-16	Flange Kit bag assembly, includes 1/2 inch straight flange, O-ring, 9/64 inch hex screws and 9/64 inch hex wrench	Flange Kit	All VR8XXX, VR4XXX, SV9XXX	

Hydronic Heating—Aquastat® Controls

Single Function Aquastat® Controls

L4006, L4103, L6006, L4008, L6008 and L8100 controls provide high limit, low limit, circulator control, or combination low limit and circulator control in hydronic heating systems. See table below for available models and their applications.

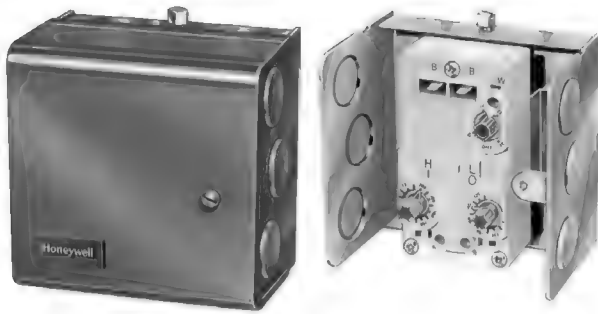
Model Number	Element Type	Application	Switching Action	Operating Range	
				F	C
L4006A	Immersion type	High or low limit.	SPST, contacts break on temp rise.	100 to 240 40 to 180	38 to 116 8 to 83
L4006B	Immersion type	Circulator control.	SPST, contacts make on temp rise.	100 to 240	38 to 116
L4006E	Immersion type	High limit; manual reset.	SPST, contacts break on temp rise.	130 to 270	54 to 132
L4006H	Strap-on mounting	High limit; manual reset.	SPST, contacts break on temp rise.	100 to 240	38 to 116
L4103A	Immersion type	High limit	SPST, contacts break on temp rise.	100 to 240	38 to 116
L6006A,B	Immersion type	Circulator control and high limit or low limit.	SPDT	100 to 240	38 to 116
L6006C	Strap-on mounting	Circulator control, high limit and low limit.	SPDT	65 to 200	18 to 93
L4008A	Remote bulb	High or low limit.	SPST, contacts break on temp rise.	100 to 240 130 to 270	38 to 116 54 to 132
L4008B	Remote bulb	Circulator control.	SPST, contacts make on temp rise.	100 to 240	38 to 116
L4008E	Remote bulb	High limit; manual reset.	SPST, contacts break on temp rise.	130 to 270	54 to 132
L6008A	Remote bulb	Circulator control and low limit.	SPDT.	-30 to +70 100 to 240	-34 to +21
L8100B	Immersion type	High limit.	SPST, contacts break on temp rise.	100 to 180	38 to 82

Multiple Function Aquastat® Controls

L4081, L6081, L8151, L7124, L8124 and L8148 controls combine high limit, low limit, circulator switching, circulating control and power for zone valves in hydronic heating systems. See table below for available models and their applications.

Model Number	Element Type	Application	Switching Action	High Limit		Circulator/Low Limit			
				F	C	F	C		
L4081A	Immersion type	High and low limit.	SPST, high limit; SPST, low limit.	130 to 240	54 to 116	110 to 220	43 to 104		
L4081B		High limit and circulator control.	SPST, high limit; SPST, circulator.						
L6081A,C		High limit, low limit and circulator control.	SPST, high limit; SPST, low limit and circulator.						
L7124U		High Limit Protection, Low Limit and Circulation Control	—						
L7148A,C	Remote Bulb	Electronic high limit.	SPST, burner; SPST, circulator.			—	—		
L8124A,C	Immersion type	High limit, low limit and circulator switching and control in line voltage multizone systems.	—			110 to 220	43 to 104		
L8124B		High limit, low limit and circulator switching and control in millivoltage single zone systems.							
L8124E,G,L		High limit, low limit and circulator control in multizone systems; with large transformer and extra terminals for powering low voltage zone valves.							
L8148A		High limit, circulator and line voltage burner control.				140 to 240	60 to 116	—	—
L8148J		High limit, circulator and millivoltage or low voltage control.							
L8151A		Remote Bulb				Low limit, high limit, and circulator control.		130 to 240	54 to 116

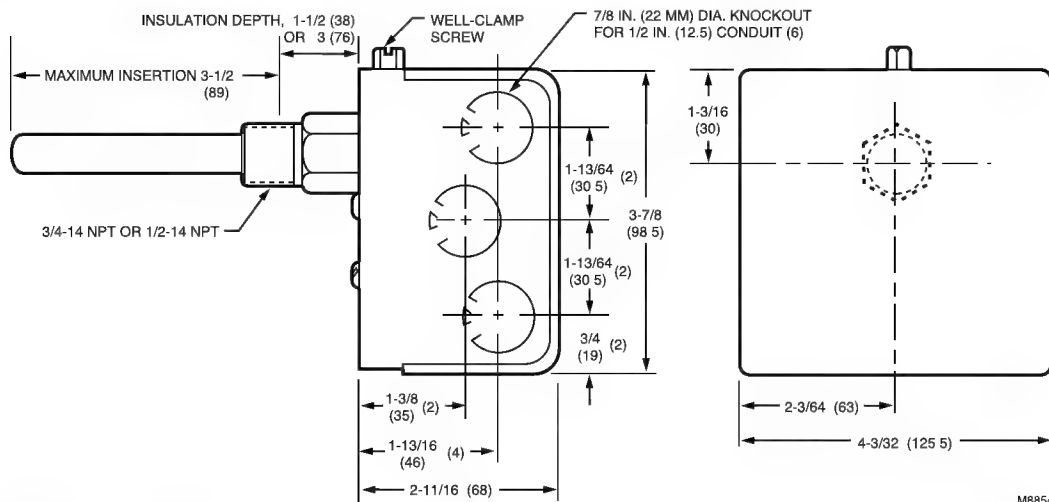
L4081; L6081 Multiple AquaStat® Controllers



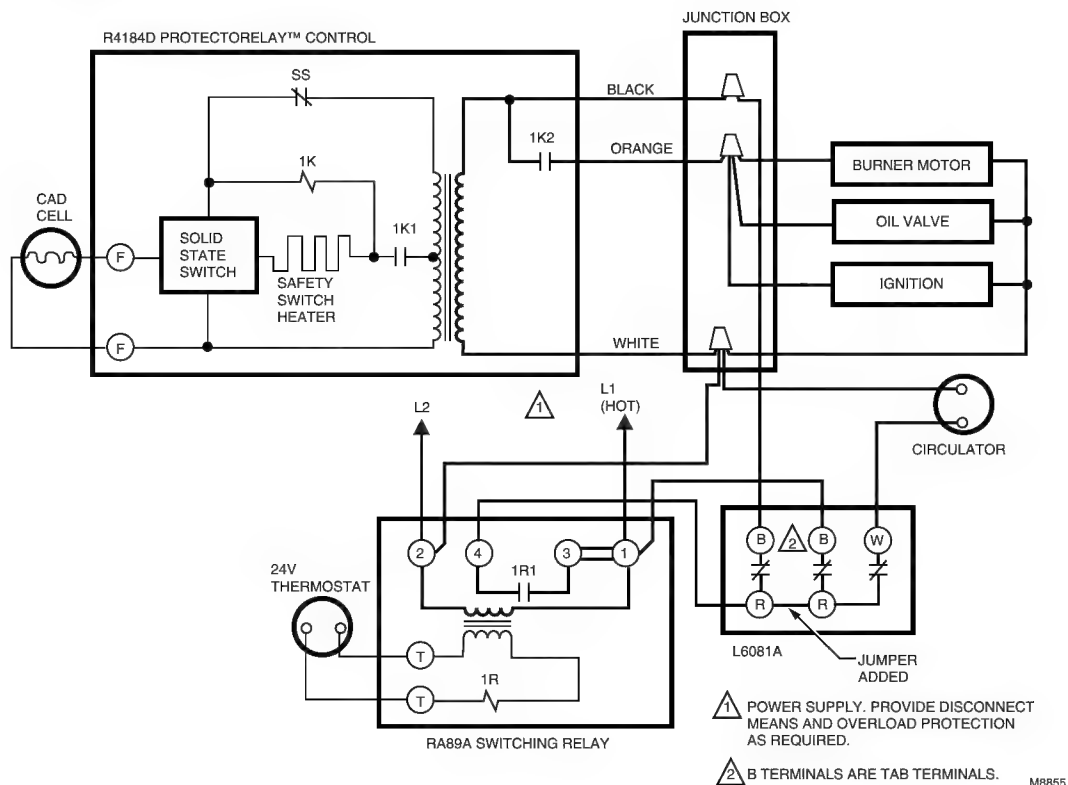
High limit, low limit and/or circulator controllers used to regulate boiler water temperature in gas- or oil-fired hydronic heating systems.

- Immersion type, liquid-filled sensing element actuates two snap switches.
- Controller may be mounted in any position and does not require leveling.
- Adjustments made inside front cover for accessibility.
- TRADELINE model includes tube of heat-conductive compound and setting stops.

Dimension Diagram



L6081 used with oil burner



Hydronic Heating—AquaStat, Multi-function

Electrical Ratings, Ignition: Transformer Load: 360 VA

Humidity Ratings: 0 to 95% RH, non-condensing

High Limit: 130 F to 240 F (54 C to 116 C)

Low Limit: 110 F to 220 F (43 C to 104 C)

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: UL Listed: File No. MP466, Vol. 12, Sec. 4, Guide No. MBPR2

Electrical Ratings

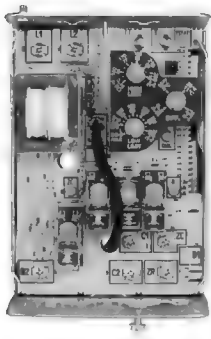
Full Load	Locked Rotor	Millivolt
5.1 A @ 240 Vac 8.0 A @ 120 Vac	30.6 A @ 240 Vac 48.0 A @ 120 Vac	0.25 at 0.25 to 12 Vdc

Product Number	Application	Insulation Depth		Differential Temperature (F)	Mounting	Insulation Depth		Switching Action	Includes
		(inch)	(mm)			(inch)	(mm)		
L4081A1023	High and Low limit.	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal	3/4 in. - 14 Nat	3/4 in. - 14 Nat	SPST: High & Low Limit	—
L4081A1171	High and Low limit.	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal	1/2 in. - 14 npt	1/2 in. - 14 npt	—	—
L4081A1197	High and Low limit.	1 1/2 in. to 3 in. less well.	38 mm to 76 mm less well	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal	—	—	—	—
L4081B1013	High Limit and Circulator	3 in.	76 mm	10 F fixed	Horizontal	3/4 in. - 14 npt	3/4 in. - 14 npt	SPST: High Limit & Circulator	—
L4081B1047	High Limit and Circulator	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal	3/4 in. - 14 npt	3/4 in. - 14 npt	SPST: High Limit & Circulator	—
L4081B1096	High Limit and Circulator	3 in.	76 mm	10 F fixed	Horizontal	—	—	SPST: High Limit & Circulator	—
L4081B1112	High Limit and Circulator	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal	3/4 in. - 14 npt	3/4 in. - 14 npt	—	—
* L6081A1010	High Limit and Circulator High and Low limit.	3 in.	76 mm	10 F fixed	Horizontal	3/4 in. - 14 NPT	3/4 in. - 14 NPT	—	3 in. insertion well.

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Aquastat, Multi-function

L7124U Universal Oil Electronic Aquastat® Controller



The L7124U Controller provides electronic temperature sensing in a UL limit-rated control with a single sensing probe. The L7124U controls circulator, oil burner and boiler temperature. The L7124U replaces the L8124A, L8124C and L8148A Controllers.

- Universal control for oil-fired boilers.
- Mounts either horizontally or vertically.
- Mounts directly on the boiler.
- Replaceable fuse to protect transformer.
- Diagnostic light emitting diodes (LED).
- Replaceable relays.
- Separately replaceable sensor, used in conjunction with the L7124U, produces a limit rated system.
- Low Limit Disable.
- Communications port for future field added advanced feature modules.
- Adjustable low limit differential.
- Mounts on standard 1/2 in. (13 mm) or 3/4 in. (19 mm) wells.
- Provides multizone control with separate circulators and R845 Relays or R8888 Zone Relay Panel.
- UL Limit Controls pending approval for both U.S. and Canada eliminates need for second limit control.

Dimensions (in.): 6 1/8 in. high, 4 5/16 in. wide, 3 1/8 in. deep
156 mm high, 110 mm wide, 79 mm deep

Electrical Ratings (Anticipator Setting): .1A

Voltage: 120 Vac

Frequency: 60 Hz

Humidity Ratings: 0 to 95% RH, non-condensing

Minimum Ambient Temperature: -30 F (-34 C)

Maximum Ambient Temperature: -30 F (-34 C)

High Limit: 130 F to 240 F (54 C to 116 C)

Low Limit: 110 F to 220 F (43 C to 104 C)

Setpoint Temperature Range: 130 F to 240 F

Maximum Power Consumption: 2000 VA

Approvals:

Underwriters Laboratories, Inc: UL Listed: File No. MP466

Burner		Circulator			Electrical Ratings	
Full Load	Locked Rotor	Full Load	Locked Rotor	Millivolt	Full Load	Locked Rotor
Low Voltage: 0.8 A max. @ 24 Vac Line Voltage: 7.4 A @ 120 Vac 3.7 A @ 240 Vac	Line Voltage: 44.4 A @ 120 Vac 22.7 A @ 240 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac

Product Number	Applica- tion	Capillary Length	Insulation Depth		Differential Temperature	Mounting	Insulation Depth		Includes
		(inch)	(inch)	(mm)	(F)		(inch)	(mm)	
• L7124U1003	High Limit Protection, Low Limit and Circulation Control	3 to 7	1 1/2 in.	38 mm	High limit: 15 F fixed; low limit: 10-25 F adj.	Vertical or Horizontal Mounting	3/4 in. -14 npt 1/2 in. -14 npt	3/4 in. -14 npt 1/2 in. -14 npt	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Horizontal case.

* TRADELINE models • SUPER TRADELINE models

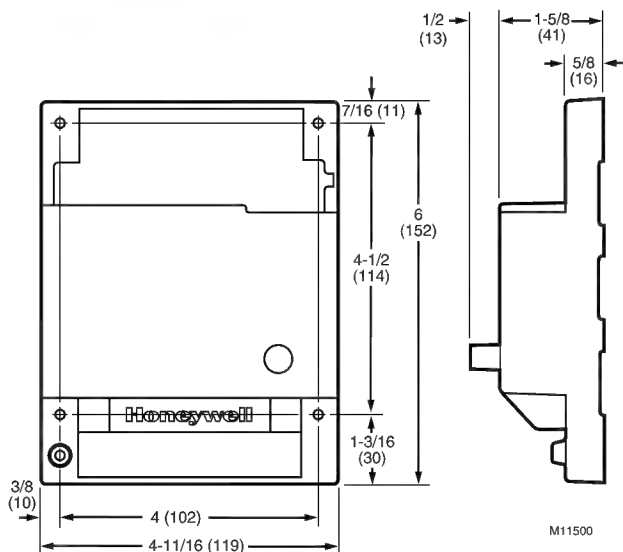
Hydronic Heating—AquaStat, Multi-function

L7148 Electronic AquaStat® Controller



Replaces the function of the bulb and capillary electromechanical AquaStat® Controller with electronic temperature sensing and microprocessor controlled relays.

Dimension Diagram



- Combination AquaStat® and high limit controller is intended for use in gas-fired boilers using a 24 Vac burner circuit with vestibules for a wiring enclosure.
- Can replace a Honeywell L4080 High-Limit and R8285 Transformer Relay.
- Used in gas boilers where ignition controls such as the Honeywell S8600 Spark Ignition or SV9500/SV9501 SmartValve™ controls or standing pilot gas controls such as the Honeywell VR8300 are powered from 24 Vac.
- An external 120 Vac to 24 Vac transformer with 10 VA minimum is required to power the L7148F. For total external transformer VA requirements, add the 10 VA requirement for the control, gas valve load requirement (connections B1, B2), zone valve connection requirement (see zone valve specifications), vent damper requirement and VA requirement for any other equipment. Total low voltage load must not exceed 4A.
- Available with quick-connect or AMP® plug connections.
- W, R and C terminals are provided in a terminal block with screw connections.

Electrical Connections: quick-connect

Electrical Ratings (Anticipator Setting): 0.1A

Electrical Ratings, Ignition: Transformer Output: nominal 24 Vac

Frequency: 60 Hz

Humidity Ratings: 0 to 95% RH, non-condensing

Minimum Ambient Temperature: -30 F (-9 C)

Maximum Ambient Temperature: -30 F (-9 C)

Setpoint Temperature Range: 130 F to 240 F

Maximum Power Consumption: 10 VA

Approvals:

Underwriters Laboratories, Inc: UL Component Listed: File No.

MP466; Canadian UL Component Recognized: File No. MP466

Burner		Circulator	
Full Load	Full Load	Locked Rotor	Millivolt
2.0 A @ 24 Vac	7.4 A @ 120 Vac	7.4 A @ 120 Vac	44.4 A @ 120 Vac

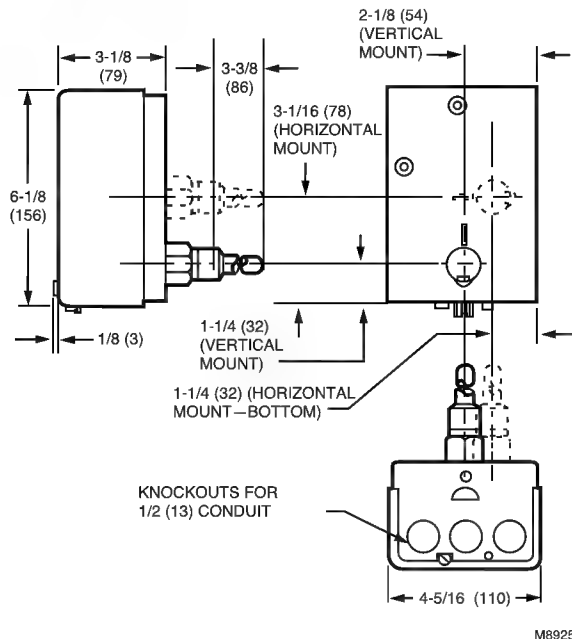
Product Number	Differential Temperature		Mounting	Switching Action	Description	Includes
	(F)	(C)				
L7148F1026	10 F fixed	12 C fixed	Compression	—	AquaStat Controller	—
L7148F1034	10 F fixed	12 C fixed	Compression	SPST	AquaStat Controller	Automatic Vent Damper Plug
L7148F1018	10 F fixed	12 C fixed	Compression	—	AquaStat Controller	—
L7148F1042	10 F fixed	12 C fixed	Compression	SPST	AquaStat Controller	Automatic Vent Damper Plug

* TRADELINE models • SUPER TRADELINE models

L8124 Triple Aquastat® Relay



Dimension Diagrams



M8925

Immersion-type controllers that combine high limit protection with low limit and circulator control in forced hydronic heating systems, including domestic hot water service.

- Immersion-type controllers that combine high limit protection with low limit and circulator control in forced hydronic heating systems.
- Provide multizone control by using a separate circulator and R845 Relay for each zone.
- Include diaphragm powerhead and Micro Switch™ assembly that respond to temperature changes in boiler water.
- Mount directly to boiler.
- Select models include large transformers and extra terminals for supplying power to low voltage zone valves.
- require 24 Vac thermostat with heat anticipator set at 0.2 A (plus current draw of gas valve on L8124E).
- TRADELINE models include tube of heat-conductive compound and range stops.

Voltage: 120 Vac

Humidity Ratings: 0 to 95% RH, non-condensing

High Limit: 130 F to 240 F adj. (54 C to 116 C adj.)

Low Limit: 110 F to 220 F adj. (43 C to 104 C adj.)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E-O

Underwriters Laboratories, Inc: UL Listed (models with well); File No. MP466, Guide No. MBPR; UL Component Recognized (models without well); File No. MP466, Guide No. MBPR2

Accessories:

4074EUS Bag Assembly containing quick-connect to Screw Terminal for L8124 or L8148

Burner

Full Load	Locked Rotor
7.4 A @ 120 Vac	44.4 A @ 120 Vac
3.7 A @ 240 Vac	22.2 A @ 240 Vac

Circulator

Full Load	Locked Rotor	Millivolt
7.4 A @ 120 Vac	7.4 A @ 120 Vac	44.4 A @ 120 Vac
3.7 A @ 240 Vac	3.7 A @ 240 Vac	22.2 A @ 240 Vac

Product Number	Application	Insulation Depth		Differential Temperature (F)	Mounting	Switching Action	Includes
		(Inch)	(mm)				
L8124A1007	High Limit Protection, Low Limit and Circulation Control	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Vertical Mounting		3 in. insertion well.
L8124A1015	High Limit Protection, Low Limit and Circulation Control	3 in.	76 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Vertical Mounting	—	3 in. insertion well and ground screw.
* L8124B1039				High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal or Vertical Mounting	SPST: High & Low Limit	Without well and spud
L8124C1003				High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal or Vertical Mounting	SPST: High & Low Limit	
* L8124E1016	Power to low voltage zone valves			High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal or Vertical Mounting	SPST: High & Low Limit	Without well and spud
L8124G1020	Power to low voltage zone valves	—	—	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal or Vertical Mounting	SPST: High & Low Limit	Without well and spud
L8124L1011	Power to low voltage zone valves	—	—	High limit: 10 F fixed; low limit: 10-25 F adj.	Horizontal or Vertical Mounting	SPST: High & Low Limit	Without well and spud

* TRADELINE models • SUPER TRADELINE models

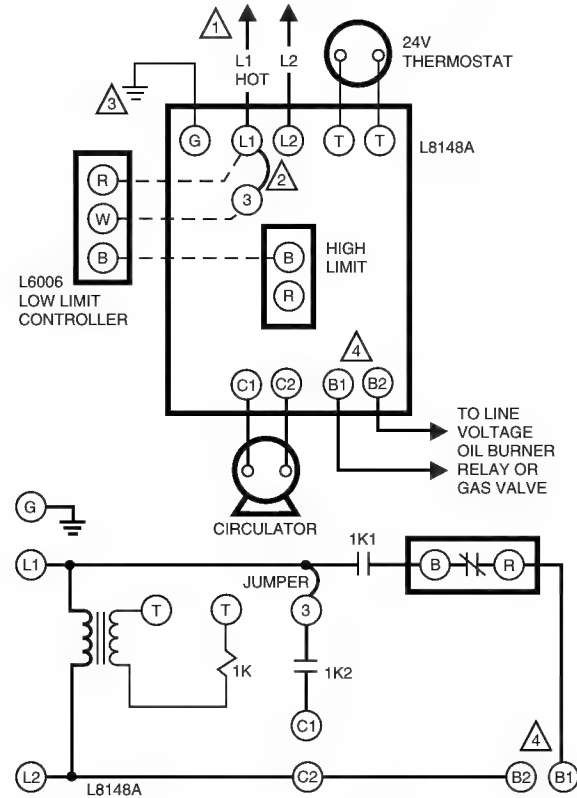
Hydronic Heating—AquaStat, Multi-function

L8148 AquaStat® Relay

Immersion-type controllers that combine high limit protection with switching relay control of burner and circulator motors.

- High limit opens burner circuit only.
- Include transformer and accessory terminals for adding a remote low limit controller.

External connections and internal schematic for L8148A

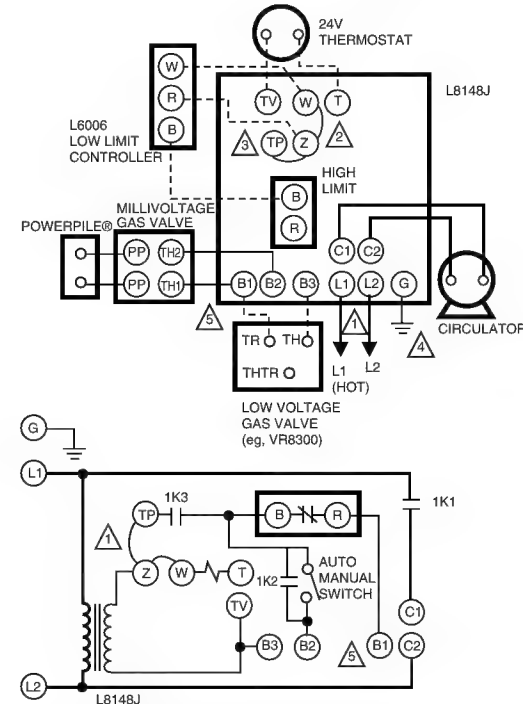


- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 REMOVE JUMPER WHEN ADDING L6006 LOW LIMIT CONTROLLER.
- 3 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 4 B1 IS 1/4 IN. TAB TERMINAL.

M2842A

- Case available for horizontal or vertical mounting.
- Requires a 24 Vac thermostat with heat anticipator set at 0.2A.
- TRADELINE models include well adapter, tube of heat-conductive compound and range stops.

Internal schematic and external connections for L8148J for low voltage or millivoltage gas valve

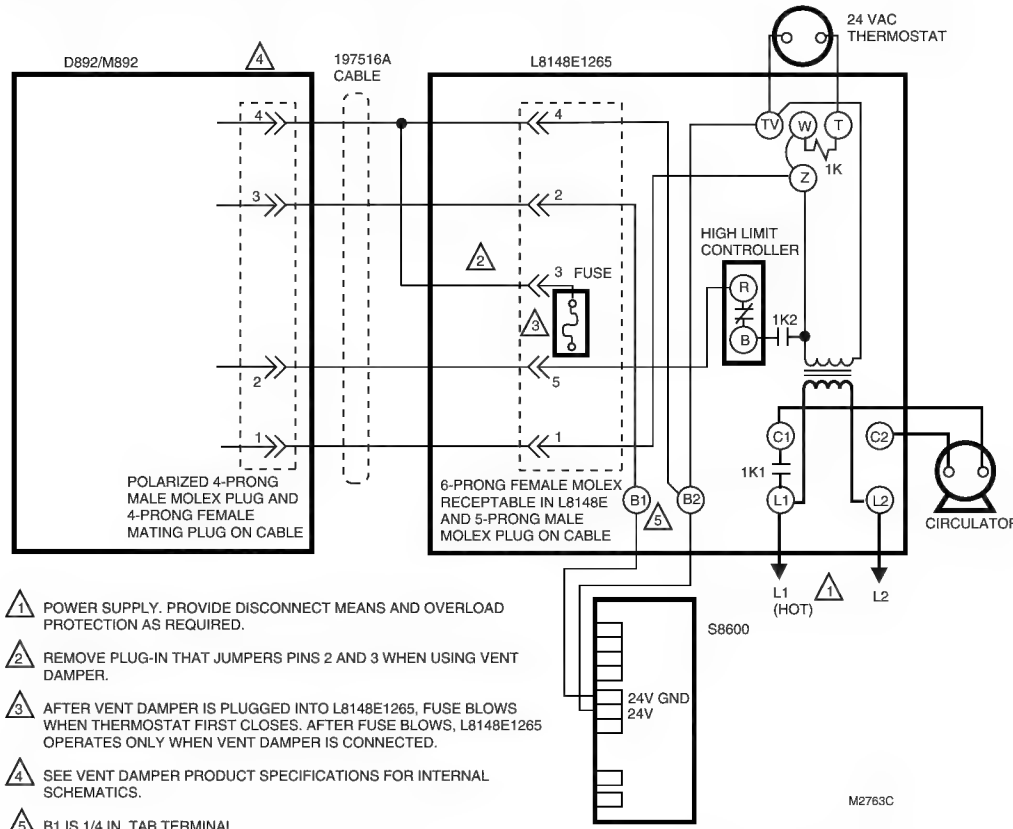


- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 REMOVE Z-W JUMPER IF SERIES 60 LOW LIMIT IS USED. WIRE LOW LIMIT CONTROLLER OR ZONE VALVES AS SHOWN. USE WITH 24V (B1-B3) CIRCUIT ONLY.
- 3 FOR 24V BURNER, WIRE B1-B3 AND USE JUMPER Z-W AND TP-Z. FOR POWERPILE® (MILLIVOLTAGE) GAS VALVES, REMOVE JUMPER TP-Z AND WIRE BURNER B1-B2. JUMPER Z-W REMAINS IN POSITION.
- 4 CONTROL CASE MUST BE CONNECTED TO EARTH GROUND. USE GROUNDING SCREW PROVIDED.
- 5 B1 IS 1/4 IN. TAB TERMINAL.

M1793B

Hydronic Heating—AquaStat, Multi-function

Wiring L8148E, with internal plug, directly to vent damper in hydronic intermittent pilot system



Electrical Connections: quick-connect / Screw
Voltage: 120 Vac
Frequency: 60 Hz
Minimum Ambient Temperature: -30 F
Maximum Ambient Temperature: -30 F

High Limit: 120F to 240F

Approvals:
Underwriters Laboratories, Inc: UL Component Listed: File No. MP466; Canadian UL Component Recognized: File No. MP466

	Burner			Circulator			Electrical Ratings	
	Full Load	Locked Rotor	Millivolt	Full Load	Locked Rotor	Millivolt	Locked Rotor	Millivolt
L8148A1017	Line Voltage: 7.4 A @ 120 Vac 3.7 A @ 240 Vac	Line Voltage: 44.4 A @ 120 Vac 22.7 A @ 240 Vac	—	3.7 A @ 240 Vac 7.4 A @ 120 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	—	—
L8148E	Low Voltage: 0.8 A max. @ 24 Vac Line Voltage: 7.4 A @ 120 Vac 3.7 A @ 240 Vac	Line Voltage: 44.4 A @ 120 Vac 22.7 A @ 240 Vac	0.25 A @ 1/4 to 12 Vdc	3.7 A @ 240 Vac 7.4 A @ 120 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	0.25 at 0.25 to 12 Vdc
L8148J1009	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	0.25 A @ 1/4 to 12 Vdc	3.7 A @ 240 Vac 7.4 A @ 120 Vac	3.7 A @ 240 Vac 7.4 A @ 120 Vac	22.2 A @ 240 Vac 44.4 A @ 120 Vac	—	—

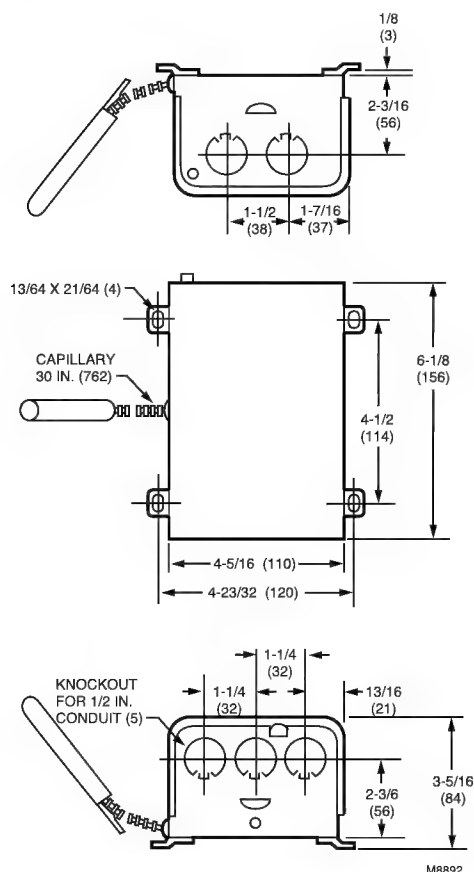
Product Number	Application	Capillary Length		Insulation Depth		Differential Temperature (F)	Mounting	Switching Action	Includes
		(inch)	(mm)	(inch)	(mm)				
* L8148A1017		—				8 F fixed		SPST: High Limit & Circulator	
* L8148E1265	High Limit	4 1/2 in.	114 mm	1 1/2 to 3 in. less well.	38 mm to 76 mm less well	15 F fixed	Vertical Mounting	—	Molex plug for use with vent damper, includes heat-conductive compound.
L8148E1299	High Limit	4 1/2 in.	114 mm	1 1/2 to 3 in. less well.	38 mm to 76 mm less well	15 F fixed	Vertical Mounting	—	50 VA transformer and heat conductive compound.
* L8148J1009		—				8 F fixed		SPST: High Limit & Circulator	
* TRADELINE models • SUPER TRADELINE models									

Hydronic Heating—AquaStat, Multi-function

L8151 Triple Function AquaStat® Relay



Dimension Diagram



Electrical Ratings (Anticipator Setting): 0.2A.

Voltage: 120 Vac

Frequency: 60 Hz

Humidity Ratings: 0 to 95% RH, non-condensing

High Limit: 130 F to 240 F (54 C to 116 C)

Low Limit: 110 F to 220 F (43 C to 104 C)

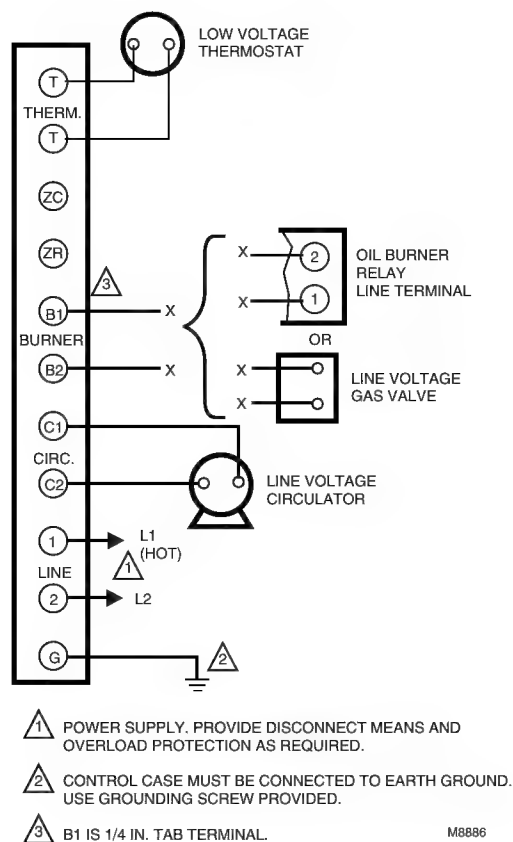
Maximum Power Consumption: 8W

Approvals:

Combines high limit protection with low limit and circulator control for use in hydronic heating systems that include domestic hot water service.

- Provides multizone control by using a separate thermostat and R845 Relay for each zone.
- Consists of diaphragm power-head and Micro Switch assembly that respond to temperature changes in the boiler water.
- Includes internal transformer to power a 24 Vac thermostat (heat anticipator set at 0.2A).
- Shielded capillary allows convenient mounting.

Typical hookup for a single zone system



Canadian Standards Association: Certified: File No. LR95329-1
Underwriters Laboratories, Inc: UL Listed: File No. MP466, Vol. 12, Sec. 6, Guide No. MBPR2

Electrical Ratings

Full Load	Locked Rotor
7.4 A @ 120 Vac	44.4 A @ 120 Vac
3.7 A @ 240 Vac	22.2 A @ 240 Vac

Product Number	Application	Capillary Length		Insulation Depth		Differential Temperature	Mounting	Includes
		(inch)	(mm)	(inch)	(mm)			
L8151A1052	High Limit Protection, Low Limit and Circulation Control	36 in.	914 mm	1 1/2 in.	38 mm	High limit: 10 F fixed; low limit: 10-25 F adj.	Vertical Mounting Horizontal	1 1/2 in. (38 mm) insulation

* TRADELINE models • SUPER TRADELINE models

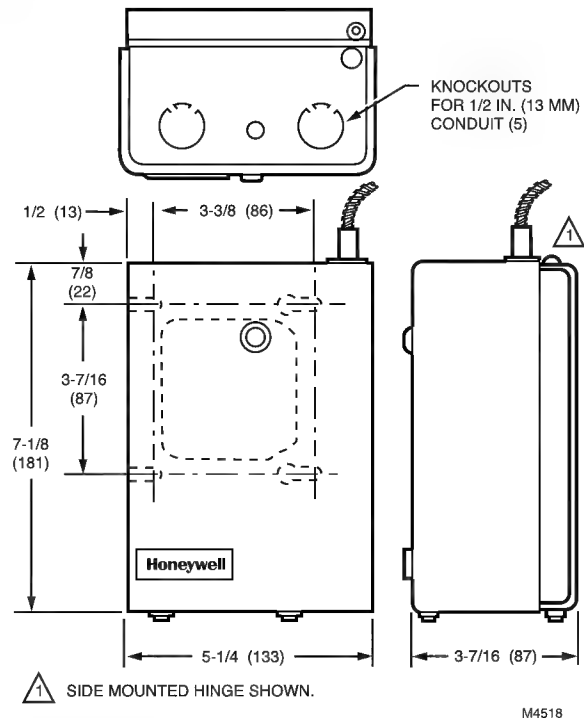
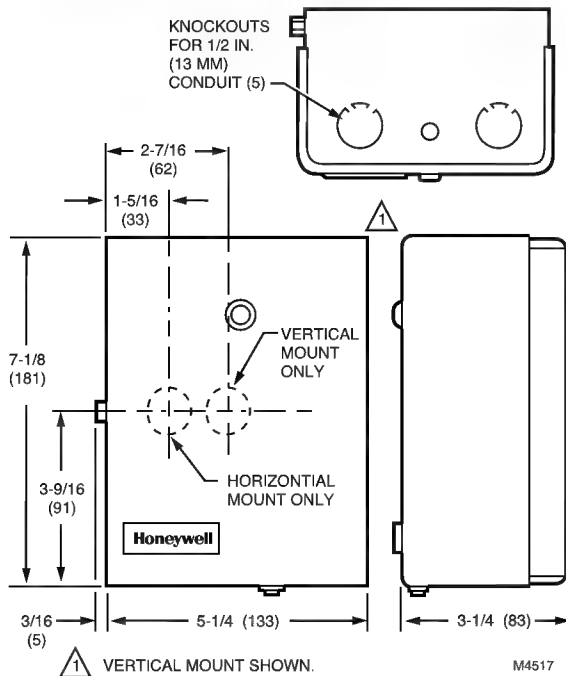
R8182 Combination Protectorelay® and Hydronic Heating Controllers



Immersion type Aquastat controller and oil burner primary control provides high limit and low limit/circulator control for oil-fired hydronic heating systems.

- Use in intermittent ignition applications.
- Capable of zone control with zone valves.
- Circulator zone control with ZC and ZR terminals on R8182D,E,H,J.
- Flame failure during the running cycle results in a 45 second attempt to restart. If unsuccessful, safety shutoff occurs, requiring manual reset before burner can be restarted.
- R8182D,E,F mount directly on burner; R8182H,J mount on 4 x 4 in. junction box and include 5 ft (1.5 m) armored capillary with remote sensor.
- C554A Cadmium Sulfide Flame Detector and a 24 Vac thermostat required.

Dimension Diagram



Electrical Ratings (Anticipator Setting): 0.2A.

Electrical Ratings, Ignition: 360 VA

Voltage: 120 Vac

Frequency: 60 Hz

Humidity Ratings: 0 to 95% RH, non-condensing

High Limit: 130 F to 240 F (54 C to 116 C)

Low Limit: 110 F to 220 F (43 C to 104 C)

Maximum Power Consumption: 9W

Timing Safety Switch: 45 sec.

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: UL Listed: File No. listed: MP268,

Vol. 3,4 (R8182D,E,F), Vol. 37 (R8182H,J), Sec. 1.

Burner	
Full Load	Locked Rotor
4.4 A @ 120 Vac	26.4 A @ 120 Vac

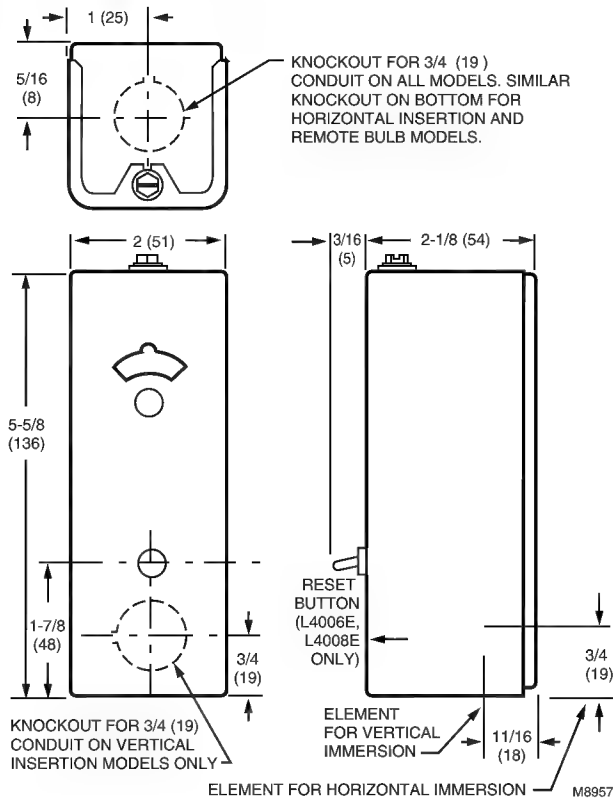
Hydronic Heating—AquaStat, Multi-function

	Product Number	Application	Insulation Depth		Differential Temperature (F)	Mounting	Insulation Depth		Includes
			(inch)	(mm)			(inch)	(mm)	
*	R8182D1079	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 10 F fixed; low limit/circulator: 10 F to 25 F adj.	Vertical Mounting	—	—	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Heat-conductive compound and vertical case.
*	R8182D1111	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 10 F fixed; low limit/circulator: 10 F to 25 F adj.	Horizontal	—	—	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Heat-conductive compound and vertical case.
	R8182D1129	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 10 F fixed; low limit/circulator: 10 F to 25 F adj.	Horizontal	—	—	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Heat-conductive compound and vertical case.
	R8182E1118	Use in an intermittent ignition application	3 in.	76 mm	high limit: 15 F fixed	Vertical Mounting	1/2 in. - 14 npt	1/2 in. - 14 npt	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Vertical case.
*	R8182H1070	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 10 F fixed; low limit/circulator: 10 F to 25 F adj.	On junction box	—	—	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Heat-conductive compound and horizontal case.
	R8182J1042	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 15 F fixed	On junction box	3/4 in. - 14 npt	3/4 in. - 14 npt	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Horizontal case.
	R8182J1059	Use in an intermittent ignition application	1 1/2 in.	38 mm	high limit: 15 F fixed	On junction box	1/2 in. - 14 npt	1/2 in. - 14 npt	Auxiliary ZC and ZR terminals may be used to provide circulator zone control through an R845A Switching Relay. Horizontal case.
* TRADELINE models • SUPER TRADELINE models									

L4006; L6006 Aquastat® Controller



Dimension Diagram



Immersion type controllers for limiting or regulating temperatures of liquids in boilers or tanks.

- Totally enclosed Micro Switch™ snap-acting switches operate on temperature rise to setpoint.
- Visible control point scale and external adjustment screw permit easy setting.
- Horizontal or vertical insertion of the sensing element.
- Direct or well immersion of the sensing element.
- Models available for strap-on mounting.
- Remote bulb model may be used to sense air temperature in ducts and in outside air sensing applications.
- TRADELINE models include heat-conductive compound.
- Select models have wells.

Ambient Temperature Range: 150 F (66 C)

Operating Temperature Range: 100F to 240 F (38C to 116 C)

Maximum Pressure Rating: capillary bulb (direct immersion); 200 psi (1379 kpa), immersion well: 255 psi (1758 kpa)

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: UL Component Recognized: File No.

MP466, Vol. 6, Sec. 1, Guide No. MBPR2

American Gas Association: AGA Certified

Accessories:

137536A Scale Lock No. 3 Screw Assembly for mounting. Use with L4006 and L4008

Electrical Ratings

Full Load	Locked Rotor	Millivolt
8.0 A @ 120 Vac	48.0 A @ 120 Vac	0.25 A @ 0.25 to 12 Vdc
5.1 A @ 240 Vac	30.6 A @ 240 Vac	

Product Number	Applica-tion	Bulb Size		Insulation Depth		Differential Temperature		Mounting	Insulation Depth		Switching Action	Includes
		(inch)	(mm)	(inch)	(mm)	(F)	(C)		(inch)	(mm)		
L4006A1009	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	1 1/2 in.	38 mm	5 F Fixed	3 C fixed	Horizontal Vertical Mounting	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.	1 1/2 in. (38 mm) insulation
L4006A1017	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	1 1/2 in.	38 mm	5 F to 30 F adj.	3 C to 17 C fixed	Horizontal Vertical Mounting	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.	1 1/2 in. (38 mm) insulation
L4006A1132	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F Fixed	3 C fixed	Horizontal Vertical Mounting	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.	3 in. (76 mm) insulation, stop factory-set at 160 F (71 C).

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—AquaStat, Single Function

	Product Number	Applica- tion	Bulb Size		Insulation Depth		Differential Temperature		Mounting	Insulation Depth		Switching Action	Includes
			(inch)	(mm)	(inch)	(mm)	(F)	(C)		(inch)	(mm)		
*	L4006A1678	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.	3 in. (76 mm) insulation, stop factory-set at 240 F (116 C), and heat- conductive compound.
*	L4006A1959	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	2 F fixed	1 C fixed	Horizontal Vertical Mounting	3/4 in.	3/4 in.	SPST, contacts break on temperature rise.	1 1/2 in. (38 mm) insulation and heat- conductive compound.
*	L4006A1967	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	1 1/2 in.	38 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	3/4 in.	3/4 in.	SPST, contacts break on temperature rise.	1 1/2 in. (38 mm) insulation, stop factory-set at 240 F (116 C).
	L4006A2007	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	3/4 in.	3/4 in.	SPST, contacts break on temperature rise.	3 in. (76 mm) insulation.
	L4006A2148	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	3/4 in.	3/4 in.	SPST, contacts break on temperature rise.	—
	L4006B1007	Circulator	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	1 1/2 in.	38 mm	5 F Fixed	3 C fixed	Horizontal Vertical Mounting	1/2 in.	1/2 in.	SPST, contacts make on temperature rise.	1 1/2 in. (38 mm) insulation
*	L4006B1155	Circulator	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	—	—	SPST, contacts make on temperature rise.	3 in. (76 mm) insulation, stop factory-set at 240 F (116 C), and heat- conductive compound.
	L4006B1163	Circulator	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Vertical Mounting	—	—	SPST, contacts make on temperature rise.	3 in. (76 mm) insulation.
*	L4006E1067	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	Manual Reset	Manual Reset	Horizontal Vertical Mounting	—	—	SPST, contacts break on temperature rise.	3 in. (76 mm) insulation, stop factory-set at 250 F (121 C); well adapter and heat- conductive compound.
	L4006E1091	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	Manual Reset	Manual Reset	Horizontal Vertical Mounting	—	—	SPST, contacts break on temperature rise.	3 in. (76 mm) insulation.
	L4006E1125	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	Manual Reset	Manual Reset	Horizontal Vertical Mounting	—	—	SPST, contacts break on temperature rise.	—

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Aquastat, Single Function

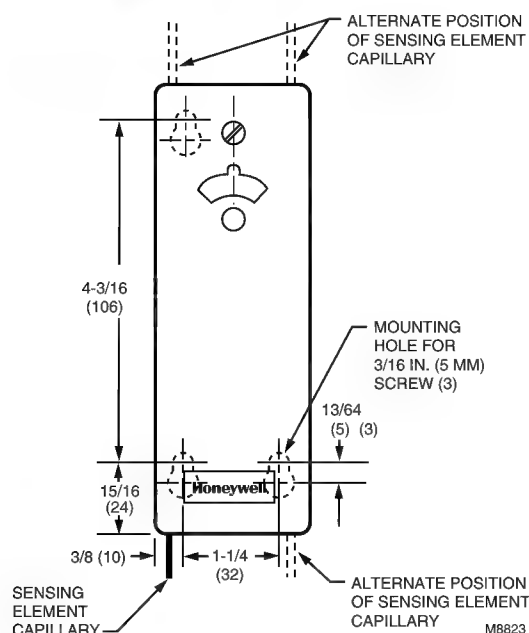
	Product Number	Applica- tion	Bulb Size		Insulation Depth		Differential Temperature		Mounting	Insulation Depth		Switching Action	Includes
			(inch)	(mm)	(inch)	(mm)	(F)	(C)		(inch)	(mm)		
*	L4006H1004	High Limit; strap-on mounting on well mount.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	1 1/2 in.	38 mm	Manual Reset	Manual Reset	Horizontal Vertical Mounting	—	—	SPST, contacts break on temperature rise.	Bracket for strap-on mounting, stop factory-set at 240 F (116 C), and heat-conductive compound.
	L6006A1004	Circulator Control and High Limit or Low Limit.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	—	—	5 F	3 C	—	1/2 in.	1/2 in.	SPDT	—
	L6006A1012	Circulator Control and High Limit or Low Limit.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	—	—	5 F to 30 F adj.	3 C to 17 C adj.	—	1/2 in.	1/2 in.	SPDT	—
•	L6006A1145	Circulator Control and High Limit or Low Limit.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal	—	—	SPDT	Stop factory-set at 240F (116 C) and heat-conductive compound
	L6006A1244	Circulator Control and High Limit or Low Limit.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	3 in.	76 mm	5 F to 30 F adj.	3 C to 17 C adj.	—	—	—	SPDT	—
*	L6006C1018	Circulator Control and High Limit or Low Limit.	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	—	—	5 F to 30 F adj.	3 C to 17 C adj.	Horizontal Strap-on-mounting Vertical Mounting	—	—	SPDT	—
* TRADELINE models • SUPER TRADELINE models													

Hydronic Heating—AquaStat, Single Function

L4008; L6008 Remote Bulb Controller



Dimension Diagram



For limiting or regulating temperature of liquids in boilers or tanks. Can also sense duct or outside air temperature.

- Remote temperature sensing element detects and responds rapidly to temperature changes.
- Totally enclosed Micro Switch™ snap-acting switch.
- Visible control point scale and external adjustment screw permit easy setting.
- Horizontal or vertical mounting of the remote element into boiler, tank, or other container. Case mounts to a vertical surface.

Ambient Temperature Range: 150 F (66 C)

Operating Temperature Range: 100F to 240 F (38 C to 116 c)

Maximum Pressure Rating: capillary bulb (direct immersion); 200 psi (1379 kpa), immersion well: 255 psi (1758 kpa)

Mounting: Horizontal or Vertical Mounting

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: UL Component Recognized: File No. MP466, Vol. 6, Sec.1, Guide No. MBPR2

Accessories:

137536A Scale Lock No. 3 Screw Assembly for mounting. Use with L4006 and L4008

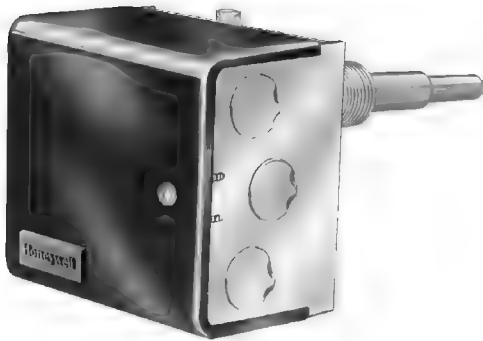
Q615A1004 Splash proof enclosure

Electrical Ratings		
Full Load	Locked Rotor	Millivolt
8.0 A @ 120 Vac	48.0 A @ 120 Vac	0.25 A @ 0.25 to 12 Vdc
5.1 A @ 240 Vac	30.6 A @ 240 Vac	

Product Number	Application	Bulb Size		Differential Temperature		Switching Action	Includes
		(inch)	(mm)	(F)	(C)		
L4008A1015	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	5 F to 30 F adj.	3 C to 17 C adj.	SPST, contacts break on temperature rise.	5 1/2 ft (1.7 m) capillary.
L4008A1130	High or Low limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	5 F to 30 F adj.	3 C to 17 C adj.	SPST, contacts break on temperature rise.	10 ft (3.04 m) capillary; factory-set stop at 200 F (93 C).
L4008B1013	Circulator	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	5 F to 30 F adj.	3 C to 17 C adj.	SPST, contacts make on temperature rise.	5 1/2 ft (1.7 m) capillary.
* L4008E1156	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	Manual Reset	Manual Reset	SPST, contacts break on temperature rise.	5 1/2 ft (1.7 m) capillary; factory-set stop at 250 F (121 C); heat-conductive compound.
* L4008E1305	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	—	—	SPST, contacts break on temperature rise.	—
L4008E1313	High Limit; Manual Reset	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	Manual Reset	Manual Reset	SPST, contacts break on temperature rise.	—
* L6008A1093	Circulator Control and Low Limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	5 F to 30 F adj.	3 C to 17 C adj.	SPDT	—
* L6008A1192	Circulator Control and Low Limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	5 F to 30 F adj.	3 C to 17 C adj.	SPDT	66 in. capillary
L6008A1242	Circulator Control and Low Limit	3/8 in. x 2 7/8 in. copper	10 mm x 73 mm copper	—	—	SPDT	—

* TRADELINE models • SUPER TRADELINE models

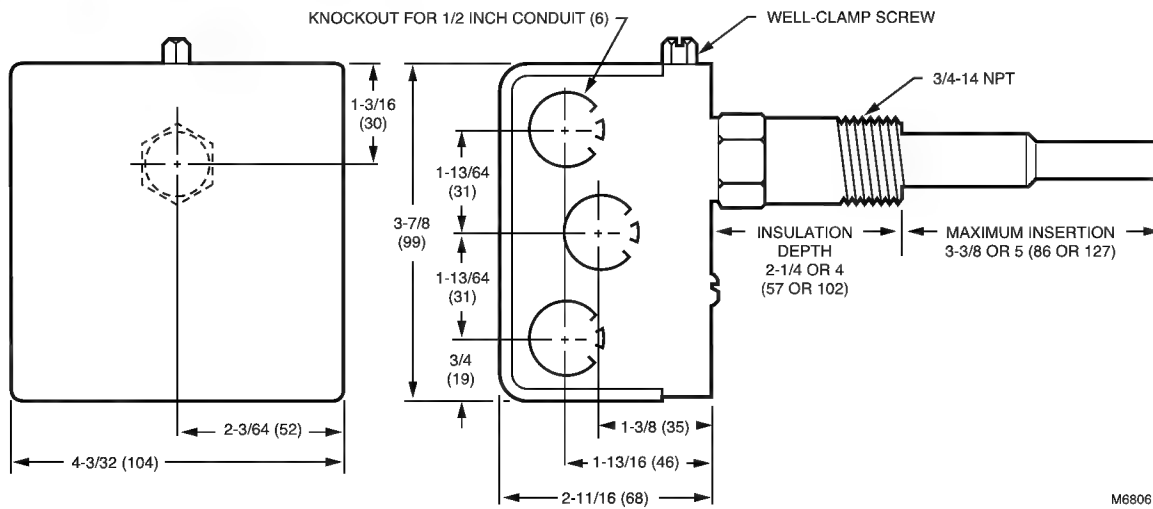
L4013 Combination Aquastat® and High Limit Controller



Immersion-type controller for oil-fired water heaters. Can also sense water temperature and cycles the burner through the oil primary.

- L4103A has a sensing element and a high limit sensor with automatic reset.
- Mounts on a horizontal immersion well in water heater wall.
- Adjustable temperature setting scale.
- Fluid-filled element operates spst, MicroSwitch™ snap-acting switch.
- Integral, nonadjustable high limit.

Dimension Diagram



M6806

Operating Temperature Range: 100 F to 240 F stop set at 150 F (scale marked- Hot-Normal-Warm) (38 C to 116 C stop set at 66 C (scale marked- Hot-Normal-Warm))

Maximum Pressure Rating: 255 psi (1756 kpa)

Approvals:

Underwriters Laboratories, Inc: UL Component Recognized: File No. MP466, Guide No. MBPR2.

Electrical Ratings

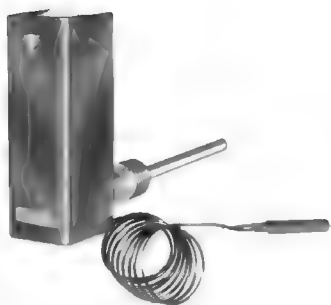
Full Load	Locked Rotor
5.0 A @ 240 Vac	30 A @ 240 Vac
8.0 A @ 120 Vac	48.0 A @ 120 Vac

Product Number	Application	Insulation Depth		Differential Temperature		Mounting	Insulation Depth		Switching Action
		(inch)	(mm)	(F)	(C)		(inch)	(mm)	
L4103A1019	High Limit	4 in.	—	7 F ± 4 F	3.9 C ± 2 C	Mounts on a horizontal immersion well in water heater wall.	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.
L4103A1100	High Limit	2 1/4 in.	—	7 F ± 4 F	3.9 C ± 2 C	Mounts on a horizontal immersion well in water heater wall.	3/4 in. NPT	3/4 in. NPT	SPST, contacts break on temperature rise.

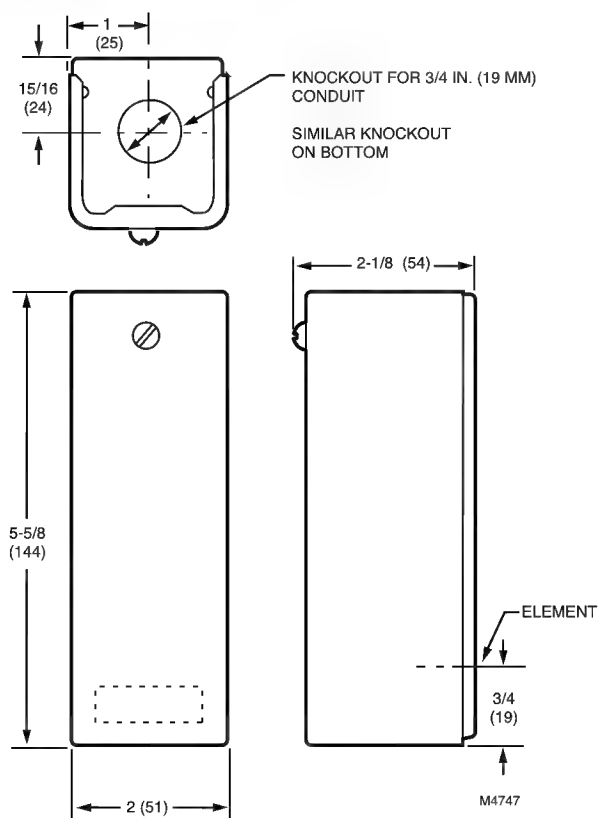
* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Aquastat, Single Function

L8100 Aquastat® Controller



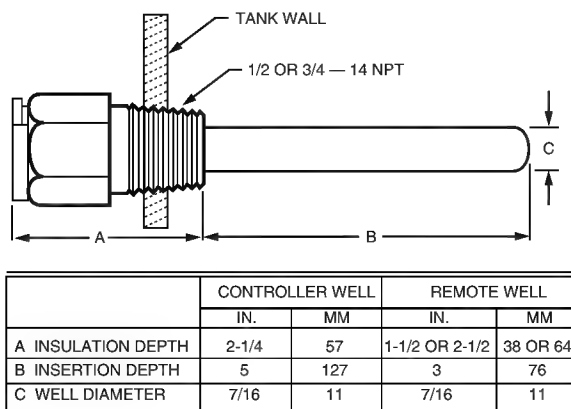
Dimension Diagram



Immersion type controller for regulating and limiting the tank temperature in water heaters.

- Regulates temperature and provides energy cutoff (ECO) action on a temperature rise past the setpoint. Includes a second sensing element that senses average water temperature to minimize stacking.
- Fluid-filled element operates Micro Switch™ spst snap-acting switch.
- ECO switch interrupts the thermocouple circuit or main valve before tank reaches 210 F (99 C) maximum temperature.
- Includes factory-installed immersion well on controller.
- Internal adjustment screw.
- Special switch terminal provides three-wire hookup from Aquastat® controller to gas valve.

Immersion well dimensions



M4746

Operating Temperature Range: 100 F to 180 F, Maximum Tank: 210 F (38 C to 82 C, Maximum Tank: 99 C)

Temperature Range, Energy Cutoff: 190 F

Maximum Pressure Rating: 255 psi (1758 kpa)

	Electrical Ratings Full Load
L8100B1037	—
L8100B1094	2A maximum at 24 Vac
L8100B1128	—

Product Number	Application	Capillary Length	Insulation Depth		Differential Temperature		Switching Action	Includes
		(inch)	(inch)	(mm)	(F)	(C)		
L8100B1037	High Limit	42	—	—	—	—	SPST, contacts break on temperature rise.	—
L8100B1094	High Limit	54 in.	controller well: 2 1/4 in. remote well: 1 1/2 or 2 1/2 in.	controller well: 57 mm, remote well: 38 mm or 64 mm	Controller: 5 F, fixed. Energy Cutoff Switch: 20 F, fixed.	Controller: 3 C fixed; Energy cutoff switch: 11 C fixed.	SPST, contacts break on temperature rise.	Two zinc plated wells and one well clamp for remote well.
L8100B1128	High Limit	39	—	—	—	—	SPST, contacts break on temperature rise.	—

* TRADELINE models • SUPER TRADELINE models

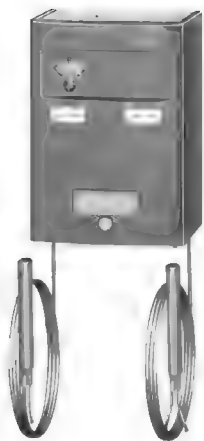
Hydronic Heating—AquaStat Accessories

Single and Multifunction AquaStat Parts

Product Number	Type	Bulb Diameter (in.)	Leadwire			Description
			Temperature	Length	Ending	
104484C	1 1/2 inch Insulation	—	—	—	—	Bag assembly
112721	Clip	—	—	—	—	Clip
120650	—	—	—	—	—	Tube
126580	—	—	—	—	—	Dial stop, use with L4081, L6081, L8124, R8182D and R8182H.
129353	Terminal	—	—	—	—	Terminal Adapter
132686	—	—	—	—	—	Clamp - Pipe
204326	Transformer	—	—	—	—	Transformer Assembly
204360	Relay	—	—	—	—	SPDT Relay
112626AA	Well	1/2	—	—	—	Well
123726AT	—	—	—	—	—	AquaStat assembly for F8182J.
137536A	—	—	—	—	—	Scale Lock Assembly
198799E	Sensor	3/8	150 C	42 in.	3/16 in. quick-connect receptacle	Sensor Assembly
198799F	Sensor	3/8	125 C	48 in.	1/4 in. quick-connect receptacle	Sensor Assembly
198799H	Sensor	3/8	125 C	42 in.	3/16 in. quick-connect receptacle	Sensor Assembly
198799K	—	3/8	150 C	42 in.	3/16 in. quick-connect receptacle	Monel Capsule
198799R	Sensor	3/8	125 C	48 in.	3/16 in. quick-connect receptacle	Sensor Assembly
198799W	Sensor	3/8	150 C	50 in.	3/16 in. quick-connect receptacle	Sensor Assembly
198799Z	Sensor	3/8	125 C	42 in.	Strip & Retain	Sensor Assembly
32002190-001	Relay	—	—	—	—	Replacement Relay for L7124U
32002656-001	Sensor Clip	—	—	—	—	Clip, Spring
32004955-001	Sensor	—	—	12 in.	—	Sensor Assembly for use with L71XX series of Electronic AquaStats
32004955-002	Sensor	—	—	18 in.	—	Sensor Assembly for use with L71XX series of Electronic AquaStats
32004955-003	Sensor	—	—	24 in.	—	Sensor Assembly for use with L71XX series of Electronic AquaStats
32004955-004	Sensor	—	—	36 in.	—	Sensor Assembly for use with L71XX series of Electronic AquaStats
32004955-005	Sensor	—	—	48 in.	—	Sensor Assembly for use with L71XX series of Electronic AquaStats
4074BMR	—	—	—	—	—	Grommet, adapter, wire nut L4081.
4074EVC	Terminal Adapters	—	—	—	—	Bag Assembly w/10 129353 terminal adapters
4074EUS	—	—	—	—	—	Bag Assembly containing quick-connect to Screw Terminal for L8124 or L8148
4074EYZ	Fuse	—	—	—	—	Bag assembly

Hydronic Heating—Pool Heater

L4031 Pool Heater Aquastat Controller



The L4031A,C Pool Heater Aquastat® units are designed to control pool water temperatures and provide high limit boiler control.

- Pool control regulates pool water temperature.
- L4031A pool side control is ambient-temperature compensated so changes in air temperature do not affect water temperature.
- High limit provides shutdown protection to prevent boiler overheating.
- L4031A provides automatic high limit reset.
- L4031C requires manual high limit reset.
- Each limit control has its own remote-bulb sensing element and snap switch for system control.

Power Supply (Vac): 120 Vac

Frequency (Hz): 60 Hz

Maximum Differential Temperature: 1 F max. (0.7 C max.)

Temperature Ratings: -30 to +150F (0 C to 66 C)

Approvals:

Canadian Standards Association: Approved

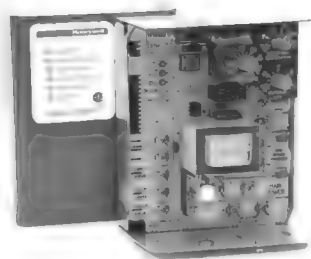
Canadian Underwriters Laboratories, Inc: Approved

Contact Ratings:

Full Load	At Locked Rotor	Resistive
8.0 A	48 A	10.0 A

Product Number	Operating Temperature Range		Electrical Connections
	(F)	(C)	
L4031A1008	40F to 180F Control / 100-240F Limit	—	Screw Terminal
* TRADELINE models • SUPER TRADELINE models			

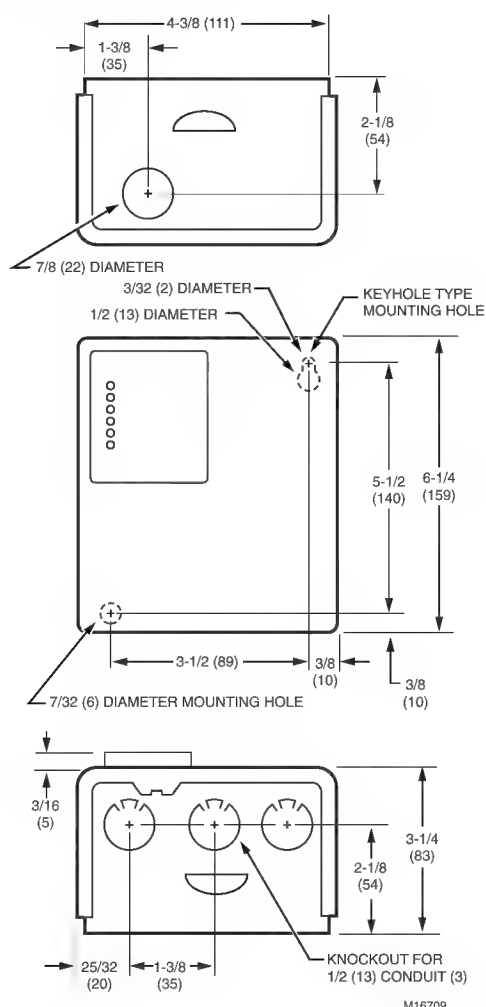
AQ475A Aquatrol Outdoor Temperature Compensator for Boilers



The AQ475A Aquatrol Outdoor Temperature Compensator automatically regulates boiler water temperature to provide outdoor reset. The DHW Priority option operates the boiler at the Boiler Maximum Temperature setting to heat domestic hot water and can operate or shut down the system circulator. The boiler High Limit safety function must still be provided by the boiler manufacturer's high limit.

- Adjustable settings for boiler maximum temperature, boiler minimum temperature and outdoor low (design) temperature.
- Selectable Warm Weather Shut Down ((WWSD) at 70 F (21 C) to prevent summer boiler operation.
- Domestic Hot Water ((DHW) priority.
- Replaceable circulator relay common to other Honeywell replacement controls.
- Supply and outdoor sensors included.
- Automatic boiler operating differential.
- Automatic system circulator exercising.
- Long-life DC relay drive control technology.
- Troubleshooting LEDs.
- Push-to-test button.
- Full size screw terminals.
- Functional replacement for Honeywell T475A Outdoor Reset Controller and W964F Aquatrol (on-off mode).

Dimension Diagram



C1-C2 Circulator Output Rating: 120Vac, 10A; 1/3 HP
(240 VA pilot duty powered contacts)

DHW Demand Input: 24 to 240 Vac

L1-L2 Power Supply Rating: 120V/60Hz, 1200 VA

R-W Thermostat Input Rating: 24 Vac, 0.10 A

T-T Boiler Output Rating: 24 to 120 Vac, 3.7 AFL/22.2 ALR max.
(240 VA pilot duty powered contacts)

Humidity Rating: Less than 90% RH, non-condensing

Sensors (Outdoor and Supply): 10 kilohm at 25 C (77 F),
NTC $\pm 1\%$, $\beta = 3950$.

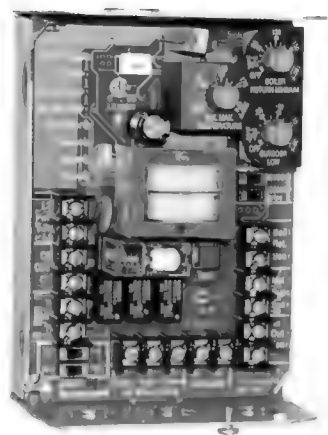
Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Product Number	Boiler Minimum Control Temperature		Boiler Maximum Control Temperature		Control Panel Temperature Rating		Outdoor Low Control Temperature	
	(F)	(C)	(F)	(C)	(F)	(C)	(F)	(C)
* AQ475A1004	OFF, 80 F to 180 F	OFF, 27 C to 82 C	120 F to 225 F	50 C to 107 C	32 F to 122 F	0 C to 50 C	-50 F to 30 F	-45 C to -1 C
* TRADELINE models • SUPER TRADELINE models								

Hydronic Heating—Electronic Aquastats

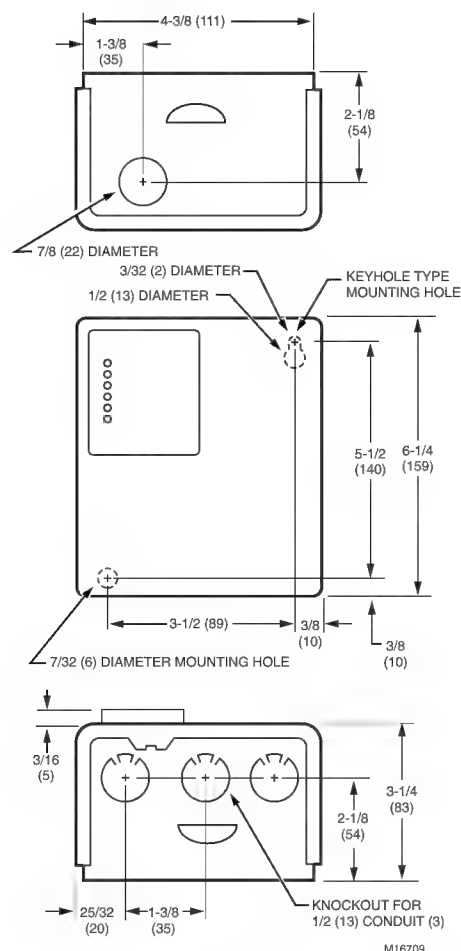
AQ675A Aquatrol Outdoor Temperature Compensator for Floating Control Valves



The AQ675A Aquatrol Outdoor Temperature Compensator for floating control valves provides full outdoor reset with a proportional-integral-derivative (PID) floating signal to a mixing or injection valve.

- Automatic reset curve calculation.
- Adjustable settings for mixing maximum temperature, boiler minimum return temperature and outdoor air low (design) temperature.
- Optional 70 F (21 C) Warm Weather Shut Down (WWSD) to prevent summer heating operation.
- Optional Setpoint Control mode for constant loop temperature control.
- Replacement circulator relay common to other Honeywell replacement controls.
- Supply, outdoor and return sensors included.
- Long-life DC relay drive control technology.
- Troubleshooting LEDs.
- Push--to-test button.
- Full size screw terminals.
- PID floating output to 24 Vac 2-, 3-, or 4-way mixing or injection valve actuator.
- Warm weather mixing valve and circulator exercise functions.
- Functional replacement for Honeywell W964F Aquatrol (mixing mode).

Dimension Diagram



C1-C2 Circulator Output Rating: 120Vac, 10A; 1/3 HP
(240 VA pilot duty powered contact with 3 minutes minimum on time)

L1-L2 Power Supply Rating: 120V/60Hz, 1200 VA

Mixing or Injection Valve Output: 24V/60Hz, 0.17 A; (4 VA)

R-W Thermostat Input Rating: 24 Vac, 0.10 A

T-T Boiler Output Rating: 24 to 120 Vac, 3.7 AFL/22.2 ALR max.

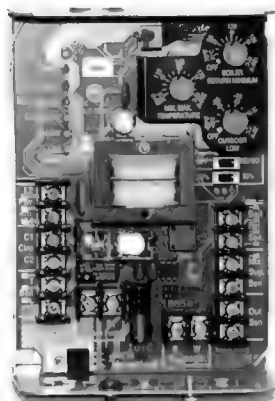
Humidity Rating: Less than 90% RH, non-condensing
Sensors (Outdoor and Supply): 10 kilohm at 25 C (77 F),
NTC $\pm 1\%$, $\beta=3950$.

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Product Number	Control Panel Temperature Rating		Mixing (Supply) Maximum Control Temperature		Outdoor Low Control Temperature		Return Minimum Control Temperature	
	(F)	(C)	(F)	(C)	(F)	(C)	(F)	(C)
* AQ675A1002	32 F to 122 F	0 C to 50 C	80 F 200 F	27 C to 93 C	-50 F to 30 F	-45 to -1 C	70 F to 180 F	21 C to 82 C
* TRADELINE models • SUPER TRADELINE models								

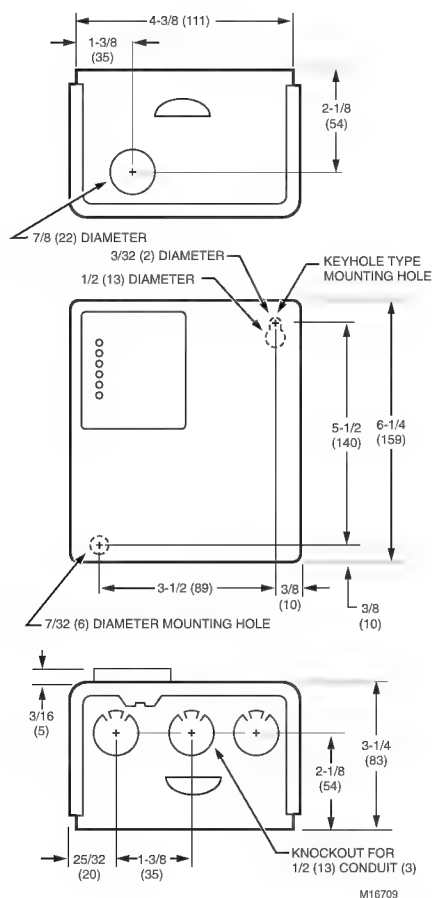
AQ775A Aquatrol Outdoor Temperature Compensator for Injection Pumps



The AQ775A Aquatrol Outdoor Temperature Compensator for injection pumps provides full outdoor reset through variable speed control of an injection pump. By using the optional boiler return sensor, both controls can provide boiler shock or flue gas condensation protection.

- Automatic reset curve calculation.
- Adjustable settings for mixing maximum temperature, boiler minimum return temperature and outdoor air low (design) temperature.
- Optional 70 F (21 C) Warm Weather Shut Down (WWSD) to prevent summer heating operation.
- Optional Setpoint Control mode for constant loop temperature control.
- Replacement circulator relay common to other Honeywell replacement controls.
- Supply, outdoor and return sensors included.
- Long-life DC relay drive control technology.
- Troubleshooting LEDs.
- Push-to-test button.
- Full size screw terminals.
- 120 Vac modulating output to variable speed circulator.
- A standard circulator can be used as an injection circulator.
- Warm weather mixing injection circulator exercise functions.

Dimension Diagram



C1-C2 Circulator Output Rating: 120Vac, 10A; 1/3 HP
(240 Va pilot duty powered contact with 3 minutes minimum on time)

L1-L2 Power Supply Rating: 120V/60Hz, 1200 VA

P1-P2 Variable Speed Injection Circulator Output: 120V/60Hz, 2.4A; 1/6 HP

R-W Thermostat Input Rating: 24 Vac, 0.10 A, Dry contacts

T-T Boiler Output Rating: 24 to 120 Vac, 3.7 AFL/22.2 ALR max., (240VA pilot duty dry contacts)

Humidity Rating: Less than 90% RH, non-condensing

Sensors (Outdoor and Supply): 10 kilohm at 25 C (77 F), NTC $\pm 1\%$, $\beta=3950$.

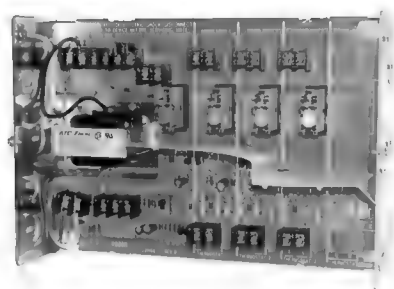
Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Product Number	Control Panel Temperature Rating		Mixing (Supply) Maximum Control Temperature		Outdoor Low Control Temperature		Outdoor Low Temperature Control Range	Return Minimum Control Temperature		Return Minimum Temperature Control Range
	(F)	(C)	(F)	(C)	(F)	(C)		(F)	(C)	
* AQ775A1001	32 F to 122 F	0 C to 50 C	80 F to 200 F	27 C to 93 C	-50 F to 30 F	-45 C to 1 C	50 F to 30 F; -45 C to -1 C	70 F to 180 F	21 C to 82 C	70 F to 180 F; 21 C to 82 C
* TRADELINE models • SUPER TRADELINE models										

Hydronic Heating—Multi-Zone Relays

R8888 Hydronic Circulator Zone Panel



Provides priority control relay switching for multizone hot water systems

Finish: Grey enamel.

Humidity Ratings (%RH): 0 to 90% RH, non-condensing

Electrical Ratings: Load Ratings: 4.4 AFL @ 120 Vac. Locked Rotor: 26.4 ALR @ 120 Vac. Horsepower: 1/6 hp. Secondary Circuit: 20 VA max. Anticipator Setting: 0.15 A.

Temperature Ratings: Ambient Range: 40 F to 105 F (4 C to 41 C)

- Provide burner control and circulator control for up to 3 (R8888A) or 4 (R8888B) zones in hot water systems.
- For use in residential and light commercial applications.
- Zone One can be selected to give priority to indirect hot water tank.
- Zone 2 burner control can be disabled. The circulator can run without the burner to prevent short cycling of small capacity zones.
- Up to four panels (12 to 16 zones total) may be used in a system.
- The R8888 may be used in combination with the R8889 Hydronic Zone Valve Panels with Priority Control.
- Operates 120V motors up to 1/6 hp.
- 24V internal transformer provides power for low voltage control circuit.
- Diagnostic LEDs for troubleshooting.
- Socket-mounted and field-replaceable relays.
- Clearly marked terminal designations for easy wiring.
- Compatible with Honeywell and competitive electronic thermostats.
- Mount horizontally only.

Transformer: Includes 24 Volt Transformer to provide power to low voltage circuit.

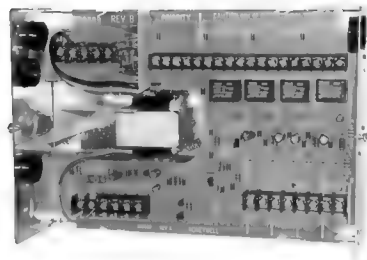
Voltage (Vac): 120 Vac

Approvals:

Underwriters Laboratories, Inc: UL c/us Listed: File no. E4436.

	Product Number	Electrical Connections	Knockouts	LEDs	Number of Zones
*	R8888A1007	Wire-clamp screw terminals	1/2 inch conduit knockouts in side of case.	Yes	3 Zone, Expandable
*	R8888B1005	Wire-clamp screw terminals	1/2 inch conduit knockouts in side of case.	Yes	4 Zone, Expandable
* TRADELINE models • SUPER TRADELINE models					

R8889 Hydronic Valve Zone Panel with Priority Control



Provides burner control and valve control for up to three (R8889A,C) or four (R8889B,D) zones in hot water systems.

Finish: Grey enamel.

Humidity Ratings (%RH): 0 to 90% RH, non-condensing

Electrical Ratings: Load Ratings: Valve: 24 Vac, 0.9 resistive. Total: 87 VA per panel (R8889A and R8889B). Anticipator Setting: 0.12 A.

Temperature Ratings: Operating: -20 F to +100 F (-29 C to +38 C).

Transformer: Includes two 24 Volt Transformer to provide power to low voltage circuit.

- For use in residential and light commercial applications.
- Zone One can be selected to give priority to indirect hot water tank.
- Up to four panels may be wired together to provide 12 to 16 zones while maintaining priority zoning.
- The R8889 may be used in combination with the R8888 circulator panels.
- Operates 24 Vac zone valves, including Honeywell VC series and Taco valves.
- 24V internal transformer provides power for low voltage control circuit and valves.
- Diagnostic LEDs for troubleshooting.
- Socket-mounted and field-replaceable burner relays.
- Clearly marked terminal designations for easy wiring.
- Compatible with Honeywell and competitive electronic, electromechanical thermostats and Honeywell Aquastat Controls.
- Mount horizontally only.

Voltage (Vac): 120 Vac

Approvals:

Underwriters Laboratories, Inc: UL c/us Listed: File no. E4436.

Accessories:

AT150A1007 Transformer (External) - 24 Vac

	Product Number	Electrical Connections	Knockouts	LEDs	Number of Zones	Number of Transformers
	R8889A1014	Captivated wire-clamp screw terminals.	1/2 inch conduit knockouts in side of case.	Yes	3 Zone, Expandable	2
	R8889B1012	Captivated wire-clamp screw terminals.	1/2 inch conduit knockouts in side of case.	Yes	4 Zone, Expandable	2
	R8889C1002	Captivated wire-clamp screw terminals.	1/2 inch conduit knockouts in side of case.	Yes	3 Zone, Expandable	1
	R8889D1000	Captivated wire-clamp screw terminals.	1/2 inch conduit knockouts in side of case.	Yes	4 Zone, Expandable	1
* TRADELINE models • SUPER TRADELINE models						

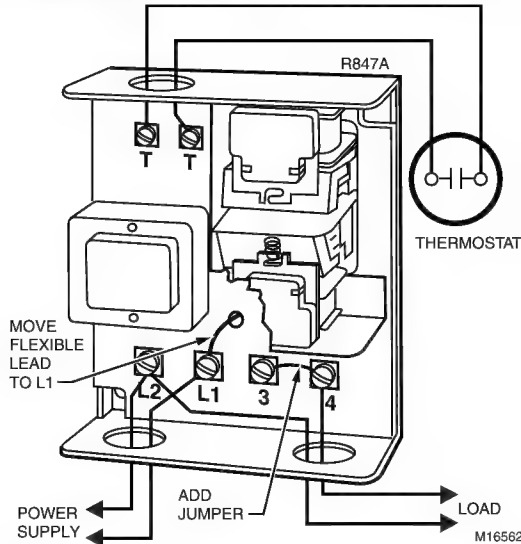
R847 Heavy Duty Relay



Provides switching for high-current loads such as cooling compressors.

- Internal, flexible leads permit spst or dpst switching.

R847A wired to break one side of the circuit with SPST switching



Application: Enclosed switching relay with internal transformer that provides 24 Vac power for control circuit

Frequency (Hz): 50 Hz, 60 Hz

Approvals:

Canadian Standards Association: CSA Certified: File no. LR1620

Underwriters Laboratories, Inc: UL Listed: File no. SA481, Guide no. SDFY

Coil Ratings

Voltage	Inrush	Sealed	Coil Current Ratings	Maximum Pull-in volt
24 Vac	21.4 VA	8.4 VA	0.4 A	20.0

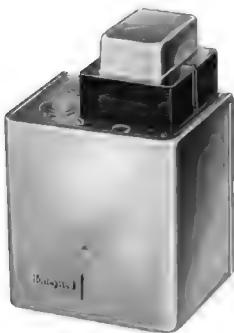
Contacts Electrical Ratings

120 Vac	240 Vac
22 aFl, 100 alr	10 AFL, 50 ALR
22 aFl, 100 alr	10 AFL, 50 ALR

	Product Number	Electrical Connections (main)	Electrical Ratings-Primary Voltage	Switching Action
*	R847A1085	2-Wire	120V	DPST or SPST
	R847A1093	2-Wire	240V	DPST or SPST

* TRADELINE models • SUPER TRADELINE models

R856 Control Center



- Integral 45 VA transformer to supply low voltage power for the system.
- Low voltage terminal strip for easy thermostat and panel connections.

Application: Fan relay and transformer in an enclosure.

Frequency (Hz): 60 Hz

Approvals:

Canadian Standards Association: CSA Certified: File no. LR95329-1

Underwriters Laboratories, Inc: UL Listed: File no. E4436, Vol. 6, Sec.9

Coil Ratings:

Inrush	Sealed	Coil Current Ratings
11 VA	6 VA	0.22 A

Contacts Electrical Ratings:

120 Vac	240 Vac
14 a N.O., 10 a N.C.	8 a N.O.; 7 a N.C.

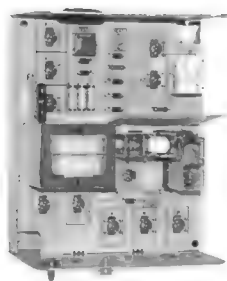
Provides 24 volt control of line voltage motors, fans, blowers, or pumps up to 1 hp.

	Product Number	Electrical Connections (main)	Electrical Ratings-Primary Voltage	Switching Action
	R856B1002	quick-connect & Screw Terminals for up to No.8 wire for line voltage loads.	120V	SPDT

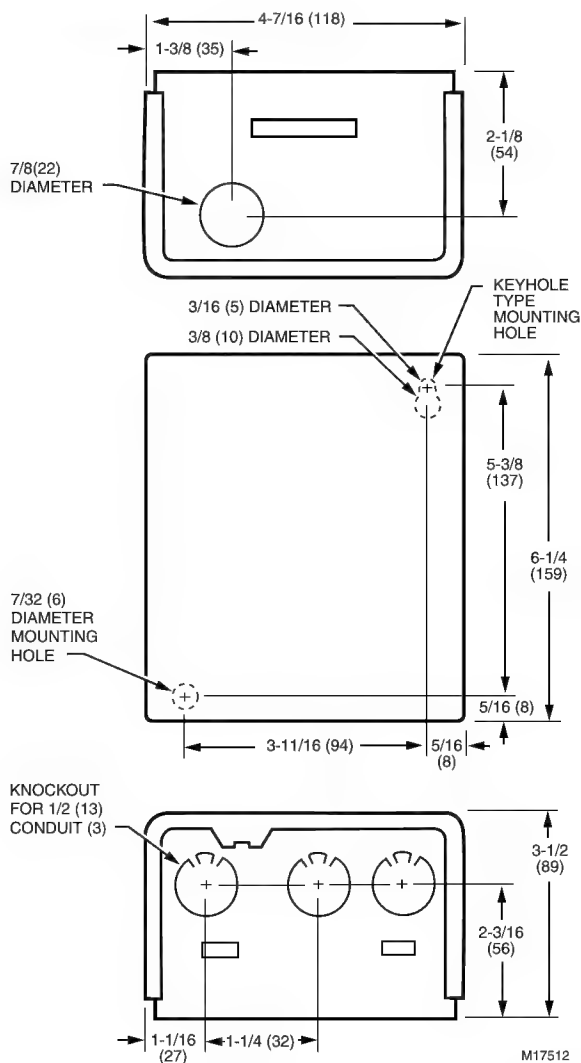
* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Switching Relays

R8845U Universal Switching Relay



Dimension Diagram



The R8845U Universal Switching Relay with 24 V transformer provides intermediate switching of line- and low-voltage devices from a line- or low-voltage controller and is typically applied in Hydronic heating systems.

- Replaceable socketed relays.
- Two troubleshooting LED.
- Push-to-test button.
- Replaceable transformer fuse.
- Low-voltage contact rating for Powerpile applications.
- Long-life DC relay drive control technology.
- Relay for use with external 24 Vac or 24 Vdc supply, with line-voltage control, or with internal 24 V transformer supply.
- One model replaces many competitor models.
- One model may replace many Honeywell models: R182A,B,C,J; R482A,B,C,J; R845; R882A,B,C,J and RA832.

Frequency (Hz): 60 Hz

Humidity Range (%RH): 0 to 90% RH, non-condensing

Temperature Ratings: -20 F to 120 F (-29 C to 49 C)

Thermostat Compatibility: All Honeywell electromechanical and electronic 2- or 3-wire

Thermostat Heat Anticipator Setting: 0.12 A

Approvals:

Canadian Standards Association: CSA Certified: File no. XAPX7

Underwriters Laboratories, Inc: UL Listed: File no. E4436, Guide no. XAPX

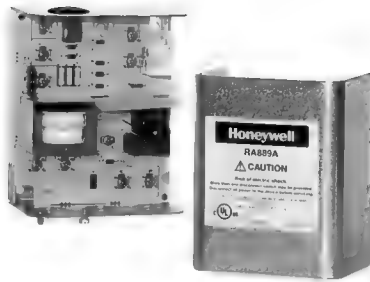
Contacts Electrical Ratings:

120 Vac

7.4 AFL, 44.4ALR on each set of line-voltage contacts. Maximum connected load is 2000 VA.

Product Number	Electrical Connections (main)	Electrical Ratings-Primary Voltage	Switching Action	Transformer Primary Rating	Transformer Secondary Rating
R8845U1003	No.8 captivated wire clamp screw terminals.	120 Vac, 60 Hz	DPST, plus PowerPile rated low voltage SPST relay	120 Vac, 60 Hz.	24 Vac, 12 VA max., 9 VA available for external load.
* TRADELINE models • SUPER TRADELINE models					

RA889A Switching Relay



Frequency (Hz): 60 Hz
Humidity Range (%RH): 0 to 90% RH, non-condensing
Temperature Ratings: -20 F to 120 F (-29 C to 49 C)
Thermostat Heat Anticipator Setting: 0.12 A
Approvals:
Canadian Standards Association: CSA Certified: File no. XAPX7

The RA889A Switching Relay with 24 V controller provides intermediate switching of line- and low-voltage devices from a line- or low-voltage controller and is typically applied in Hydronic heating systems

- High load switching capability.
- Troubleshooting LED.
- Push-to-test button.
- Replaceable transformer fuse.
- Long-life DC relay drive control technology.
- Relay for use with external 24 Vac or 24 Vdc supply, with line-voltage control, or with internal 24 V transformer supply.
- One model replaces many Honeywell models.
- Secondary of transformer protected by replaceable 1A automotive fuse.

Underwriters Laboratories, Inc: UL Listed: File no. E4436, Guide no. XAPX

Contacts Electrical Ratings:

120 Vac
15 AFL, 30 ALR, 2000 va max. on line voltage contacts.

Product Number	Electrical Connections (main)	Electrical Ratings-Primary Voltage	Switching Action	Transformer Primary Rating	Transformer Secondary Rating
RA889A1001	No.8 captivated wire clamp screw terminals.	120 Vac, 60 Hz	SPDT, plus PowerPile rated low voltage SPST relay	120 Vac, 60 Hz.	24 Vac, 12 VA max., 9 VA available for external load.

* TRADELINE models • SUPER TRADELINE models

RA89; RA832; R845 Hydronic Switching Relay



- Integral transformer provides low voltage power for control circuit.

Application: One pole line voltage, the other line or low voltage

Frequency (Hz): 50 Hz, 60 Hz

Maximum Input: 5.0 W

Temperature Ratings: 115 F Max. Ambient for 60Hz (46 C Max. Ambient for 60 Hz)

Approvals:

Underwriters Laboratories, Inc: UL Listed: File no. E4436, Guide no. XAPX

Coil Ratings:

Current Ratings	Voltage
0.4 A	24 Vac

Provide intermediate switching of a line voltage device from a low voltage controller.

Contacts Electrical Ratings:

Product Number	120 Vac	240 Vac
R845A	main contacts: 7.4 AFL, 44.4 ALR, 10.0 A resistive; secondary contacts: 3 AFL, 18 ALR	main contacts: 3.7 AFL, 22.2 ALR, 6.0 A resistive; secondary contact: 2.0 AFL, 12 ALR; max. connected load: 2000 va, 50va @ 24 V pilot duty
RA832A	main contacts: 7.4 AFL, 44.4 ALR, 10.0 A resistive; aux. contacts: 300 ma min. @ 750 mv, 1 a @ 12 vdc	main contacts: 3.7 AFL, 22.2 ALR, 6.0 a resistive; max. connected load 2000 va aux. contacts: 300 ma min. @ 750 mv, 1 a @ 12 vdc
RA89A	10.2 AFL, 61.2 ALR, 10.0 A resistive	5.1 AFL, 30.6 ALR, 6.0 A resistive

Product Number	Electrical Connections (main)	Electrical Ratings-Primary Voltage	Auxiliary Contacts	Switching Action
* R845A1030	2-Wire	120V, 50Hz, 60Hz	50 VA @ 24 Vac	DPST (one pole line voltage the other pole line or low voltage)
* RA832A1066	2-Wire	120V, 50Hz, 60Hz	50 VA @ 24 Vac	DPST (one pole line voltage the other pole low or millivoltage)
* RA832A1074	2-Wire	240V, 50Hz, 60Hz	50 VA @ 24 Vac	DPST (one pole line voltage the other pole low or millivoltage)
* RA89A1074	2-Wire	120V, 50Hz, 60Hz	—	SPST

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Residential Heating Valves

M6063 Rotary Actuator



The "Corona" series of M6063 Actuator and V5442 Compact Rotary Valves provide integrated mixing of boiler supply, boiler return, loop supply, and loop return water in hydronic heating systems.

The M6063 actuator enables automatic mixing operation when used with an AQ675A Aquatrol Outdoor Temperature Compensator, or T6984 proportional room thermostat.

- 24 Vac floating input for automatic control.
- Single screw attachment to V5442 valve body.
- Multi-poise mounting.
- Color-coded position indicator.
- Manual valve operator.
- Auxiliary end switch for cascade control outputs.
- Sealed assembly; flylead electrical connections.

Dimensions, Approximate: 2 in. high, 4 in. wide, 3 3/16 in. deep (50 mm high, 101 mm wide, 81 mm deep)

Aux Switch Ratings: 24 Vac, 3A, 24 VA pilot duty, Class 2, normally closed, Gray cable.

Control Signal: 24 Vac Floating

Electrical Connections: Color-coded 40 in. (1 meter) flyleads

Humidity Range: Less than 90% RH, non-condensing

Temperature Ratings: ambient: 32 F to 140 F (0 C to 60 C)

shipping: -40 F to +140 F (-40 C to +60 C)

Power Supply Rating: 24 Vac, 50/60 Hz, 3 VA, spdt, or sp3t (tri-state) for proportional control.

Timing: 100 seconds for 90 degrees (full) stroke

Torque: 60 in-lb (7 Nm). Manual declutch

Product Number	Controller Compatibility	Temperature Ratings		Used With
		(F)	(C)	
M6063A4007	PI or PID tri-state control signal for proportional control action, such as supplied by AQ675 Outdoor Temperature Compensator, W964F reset controller, or T6984 floating commercial thermostat.	shipping: -40 F to +140 F ambient: 32 F to 140 F	shipping: -40 C to +60 C ambient: 0 C to 60 C	V5442 Four-way mixing valve

* TRADELINE models • SUPER TRADELINE models

V5442N Rotary Valve



The "Corona" series of Compact Rotary Valves and Actuators provide integrated mixing of boiler supply, boiler return, loop supply, and loop return water in hydronic heating systems. The V5442 valve can mix both loop supply water and boiler return water simultaneously to control loop supply temperature and boiler shock or flue gas condensation protection. They may be plumbed in either a direct mixing or injection configuration. The effective Cv of the valves is increased when piped in an injection configuration.

- Valves Can be automated with M6063 actuator.
- 4-way mixing action for closed hydronic heating systems.
- Mixes loop supply with boiler supply and loop return.
- Mixes boiler return with boiler supply and loop return.
- Optimized mixing characteristics for most accurate control.
- Cast iron body; chrome plated plug.
- NPT threads.
- Suitable for manual or automatic control.
- Universal" body orients either to the left or right to match piping.
- Functional replacement for Centra ZRK-series of compact 4-way mixing valves.

End Fitting: NPT (internal Thread)

Fittings: Female NPT thread

Inlet Size: 3/4 in.

Temperature Ratings: water: 36 F to 230 F (2 C to 110 C)

shipping -40 F to 140 F (-40 C to +60 C)

Valve Body Material: Cast Iron

Product Number	Size (in.)	Coupling Controller	Cv Rating	Differential (close-off) Pressure Rating	Static Pressure Rating	Temperature Ratings	
						(F)	(C)
V5442N1015	3/4 in.	M6063A	7.4	15 psi (1Bar)	90 psi (6 Bar)	shipping -40 F to 140 F water: 36 F to 230 F	shipping: -40 C to +60 C water: 2 C to 110 C
V5442N1023	1 in.	M6063A	11.7	15 psi (1Bar)	90 psi (6 Bar)	shipping -40 F to 140 F water: 36 F to 230 F	shipping: -40 C to +60 C water: 2 C to 110 C
V5442N1031	1 1/4 in.	M6063A	18.7	15 psi (1Bar)	90 psi (6 Bar)	shipping -40 F to 140 F water: 36 F to 230 F	shipping: -40 C to +60 C water: 2 C to 110 C

* TRADELINE models • SUPER TRADELINE models

VC Series Valves



Controlled Medium: can be used with maximum 50% glycol in water solution

End Fitting: Sweat

Flow Characteristic: Linear

Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage spst or spdt or floating controller such as a room thermostat, Aquastat control, or flow switch.

- Two-way or three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one-meter cable electrical connections available.
- Safe for use with potable water.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Temperature Ratings: water: 34 F to 203 F (1 C to 95 C)
shipping -40 F to 150 F (-40 C to +65 C)

Frequency (Hz): 50 Hz, 60 Hz



Valve Body Material: Bronze

Product Number	Nominal Size	Coupling Controller	Cv Rating	Differential (close-off) Pressure Rating	Static Pressure Rating
VC6831AA1111	1/2 in.	Integral	3.2	60 psi (4 Bar)	300 psi (20 Bar)
VC6831AM1111	3/4 in.	Integral	4.6	60 psi (4 Bar)	300 psi (20 Bar)
VC6831ML6111	3/4 in.	Integral	5.9	60 psi (4 Bar)	300 psi (20 Bar)
VC6831ZZ11		Integral		60 psi (4 Bar)	300 psi (20 Bar)
VC6831MS6111	1 in.	Integral	6.6	60 psi (4 Bar)	300 psi (20 Bar)
VC8715AM1000	3/4 in.	Integral	5.8	60 psi (4 Bar)	300 psi (20 Bar)
VC8715AS1000	1 in.	Integral	7	60 psi (4 Bar)	300 psi (20 Bar)

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Well Assemblies

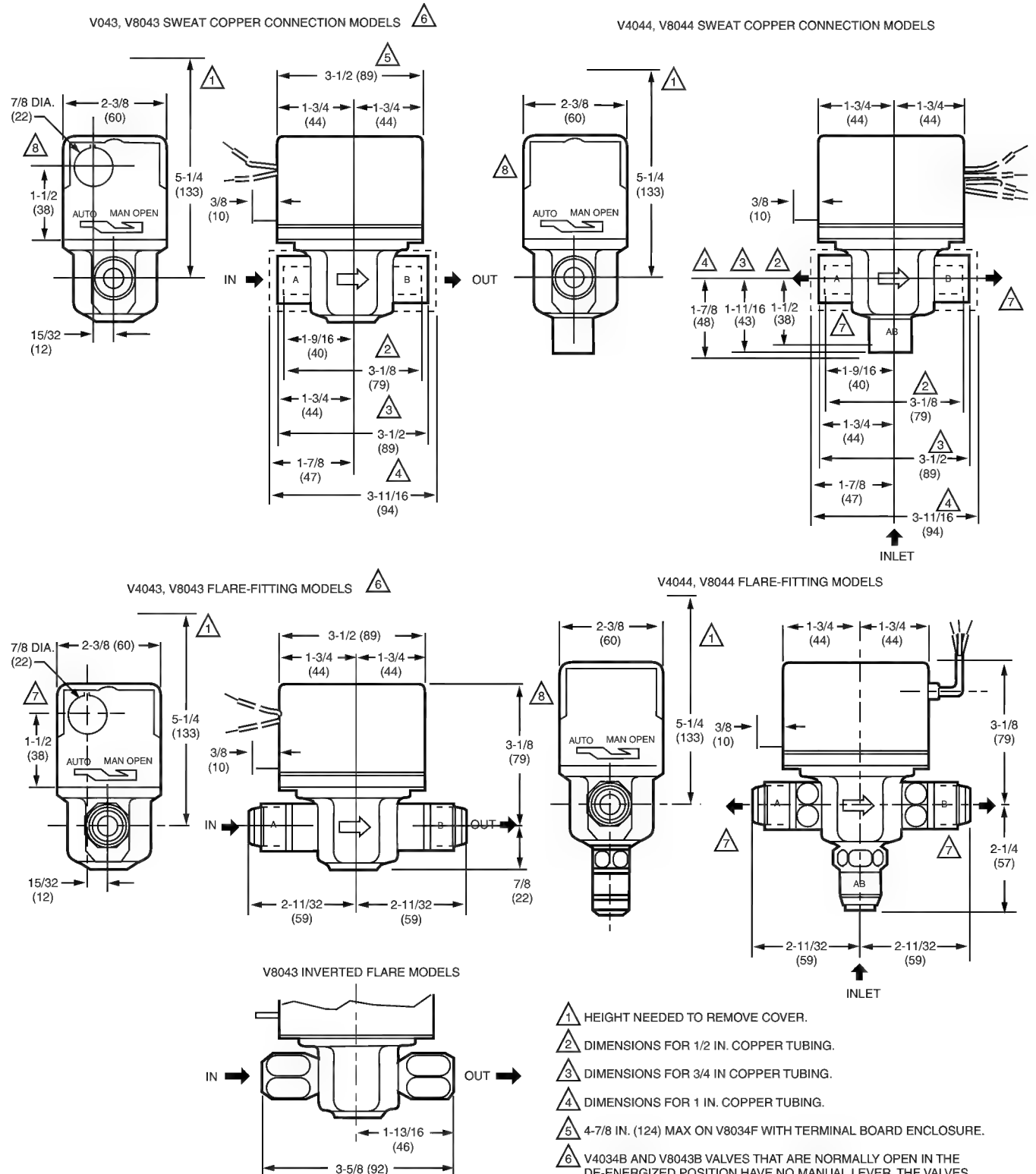
Well Assemblies

Product Number	Capillary Diameter	Materials	Insertion Length	Insulation Depth (in.)	Shell ID	Spud Thread Size		Includes	Used With
121371A	5/64 in.	Copper	3 in.	1 1/2 in.	3/8 in.	1/2 in. x 14 NPT		121371 Mounting Clamp	
121371AA	—	—	3 in.	1 1/2 in.	3/8 in.	1/2 in. x 14 NPT		121371 Mounting Clamp, Spud Set screw for armored capillary, Plug, & Nut	
121371B	5/64 in.	Copper	3 in.	1 1/2 in.	3/8 in.	3/4 in. x 14 NPT		121371 Mounting Clamp	
121371E	5/64 in.	Stainless Steel	3 in.	1 1/2 in.	3/8 in.	1/2 in. x 14 NPT		121371 Mounting Clamp	
121371L	5/64 in.	Copper	3 in.	3 in.	3/8 in.	1/2 in. x 14 NPT		121371 Mounting Clamp	
121371M	5/64 in.	Copper	3 in.	3 in.	3/8 in.	3/4 in. x 14 NPT		121371 Mounting Clamp	
121371P	5/64 in.	Copper	3 1/2 in.	1 1/2 in.	3/8 in.	1/2 in. x 14 NPT		121371 Mounting Clamp	
123869A	—	Copper	3 in.	1 1/2 in.	3/8 in.	1/2 in. x 14 NPT		125975 Well Clamp	
123870A	—	Copper	3 in.	1 1/2 in.	3/8 in.	3/4 in. x 14 NPT		—	L4081 L4006
123871A	—	Copper	3 in.	3 in.	3/8 in.	3/4 in. x 14 NPT		—	
123872A	—	Copper	3 in.	3 in.	3/8 in.	1/2 in. NPT		—	
124299AA	—	Copper	3 in.	1 1/2 in.	3/8 in.	3/4 in. x 14 NPT		Set screw in spud for armored capillary with plug	

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Zone Valves

Dimension Diagrams for V4043, V4044, V8034, V8044

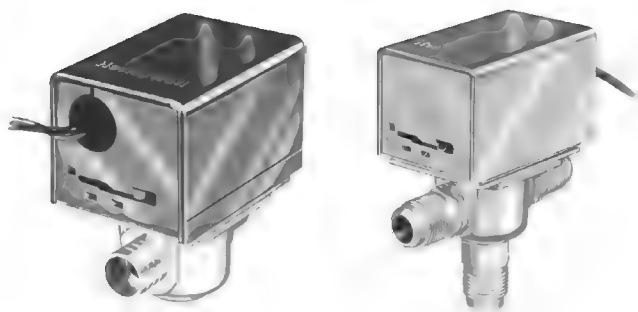


- 1 HEIGHT NEEDED TO REMOVE COVER.
- 2 DIMENSIONS FOR 1/2 IN. COPPER TUBING.
- 3 DIMENSIONS FOR 3/4 IN COPPER TUBING.
- 4 DIMENSIONS FOR 1 IN. COPPER TUBING.
- 5 4-7/8 IN. (124) MAX ON V8034F WITH TERMINAL BOARD ENCLOSURE.
- 6 V4034B AND V8043B VALVES THAT ARE NORMALLY OPEN IN THE DE-ENERGIZED POSITION HAVE NO MANUAL LEVER. THE VALVES ALSO HAVE A REVERSED POWERHEAD WHERE THE LEADWIRES EXIT THE POWERHEAD ABOVE THE B (OUTLET) PORT RATHER THAN ABOVE THE A (INLET) PORT.
- 7 REFER TO MOUNTING INSTRUCTIONS.
- 8 OPENING FOR 1/2 IN. CONDUIT ON MANUAL LEVER SIDE FOR V4043, V8043; OPENING ON OPPOSITE SIDE FOR V4044, V8044.

M10175

Hydronic Heating—Zone Valves

V4043; V4044 Line Voltage Zone Valves



Dimension Diagram

See diagram on page 151

Body Pattern: Two-way

Valve Type: Unitary, Zone

Controlled Medium: Water

ANSI Body Class: 125

Temperature Range: 40 to 240 F (4 to 93 C)

Voltage (Vac): Power Consumption: 9.6 VA

Type of Control: Electric

Frequency: 60 Hz

ON-OFF and diverting line voltage valves consist of an actuator motor and valve assembly for controlling the flow of hot or chilled water, and some models for steam.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking line connections or draining the system.
- Motor may be replaced without removing the valve body or draining the system.
- Suitable for heating and cooling applications.

Timing (sec, min): 15 s

Approvals:

Underwriters Laboratories, Inc: Listed: V8043A, B, E, V4044B

Materials:

Body	Seat	Stem	Packing O-Rings	Cartridge
Brass	Brass	Stainless Steel	EPDM rubber	EPDM

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Stem Travel	Maximum Operating Pressure		Comments
		Cv	Kv					(psi)	(kPa)	
V4043A1002	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening, Equal Percentage	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1010	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1028	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1044	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1051	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1184	1/2 in.	1 Cv	0.9 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1259	3/4 in.	8 Cv	6.9 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1317	1 in.	8 Cv	6.9 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1689	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	NPT	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1697	1 in.	10 Cv	8.6 Kv	Quick Opening	NPT	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043A1705	3/4 in.	3.5 Cv	3.0 Kv	Quick Opening	NPT	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043B1000	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043B1018	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043B1059	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043E1003	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043E1011	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4043E1029	1/2 in.	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1001	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Zone Valves

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Stem Travel	Maximum Operating Pressure		Comments
		Cv	Kv					(psi)	(kPa)	
V4044A1019	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1035	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1043	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Flare	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1050	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1191	3/4 in.	7 Cv	6 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1258	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044A1290	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	—
V4044B1009	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Flare	Stem down to close	30 degree	125 Psi	856 kPa	Bottom inlet
V4044B1017	1/2 in.	4 Cv	3.5 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	Bottom inlet
V4044B1314	3/4 in.	7 Cv	6 Kv	Equal Percentage	Sweat	Stem down to close	30 degree	125 Psi	856 kPa	Bottom inlet
* TRADELINE models • SUPER TRADELINE models										

Hydronic Heating—Zone Valves

V8043 Two-Position Normally Closed Zone Valves



ON-OFF and two-way low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water, and some models for steam.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.
- Chilled water models available for cooling and heating applications.

Dimension Diagram

See diagram on page 151

Type: Zone Valve, Unitary

Type of Control: Electric

Actuator Electrical Rating (Voltage, Frequency): 24 Vac, 50/60 Hz

De-energized Position: Normally closed

Fluid Temperature Range: 40 F to 200 F (5 C to 93 C)

Nominal Timing (sec, min): 15 sec

Power Consumption: 7.7 VA

Maximum Static Pressure : 125 psi (862 kPa)

Maximum Ambient Temperature: 125 F (52 C)

Valve action: Spring Return

Valve Body Materials: Brass

Stem Materials: Hydronic Control

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water.

Approvals:

Underwriters Laboratories, Inc: UL Listed

Accessories:

272708A 1/2 in. inverted flare to 1/2 in. sweat adapter

272708B 1/2 in. inverted flare to 3/4 in. sweat adapter

Replacement Parts:

272742A Replacement ball plug, large O-ring and four screws.

272756A Replacement O-rings; package of five.

802360JA Replacement Motor - 24 V, 50-60 Hz

802360UA Replacement Motor - 24 V, 50-60 Hz, Class F

Product Number	Pipe Connection Size (in.)	Pipe Connections	Flow Capacity		Maximum Close-off Pressure		Aux Switch Ratings	Electrical Connections		Ball Plug Materials
			Cv	Kv	(psi)	(kPa)		(inch)	(mm)	
V8043A1003	1/2 in.	Flare	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043A1011	1/2 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043A1029	3/4 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043A1037	1 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043A1193	1/2 in.	Inverted Flare	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043A1227	1/2 in.	NPT	3.5 Cv	3 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043E1004	1/2 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043E1012	3/4 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043E1020	1 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043E1061	3/4 in.	Sweat	8 Cv	6.9 Kv	8 psi	55 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Zone Valves

Product Number	Pipe Connection Size (in.)	Pipe Connections	Flow Capacity		Maximum Close-off Pressure		Aux Switch Ratings	Electrical Connections		Ball Plug Materials
			Cv	Kv	(psi)	(kPa)		(inch)	(mm)	
V8043E1079	1 in.	Sweat	8 Cv	6.9 Kv	8 psi	55 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043E1129	1/2 in.	Inverted Flare	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043E1137	1 in.	NPT	10 Cv	8.6 Kv	6.5 psi	45 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043E1145	3/4 in.	NPT	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
* V8043F1028	1/2 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	Screw terminal	screw terminal	Buna-N (NBR) Rubber Ball
* V8043F1036	3/4 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	Screw terminal	screw terminal	Buna-N (NBR) Rubber Ball
* V8043F1051	1 in.	Sweat	3.5 Cv	3 Kv	20 psi	138 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	Screw terminal	screw terminal	Buna-N (NBR) Rubber Ball
V8043F1093	3/4 in.	Sweat	8 Cv	6.9 Kv	8 psi	55 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	Screw terminal	screw terminal	Buna-N (NBR) Rubber Ball
V8043F1101	1 in.	Sweat	8 Cv	6.9 Kv	8 psi	55 kPa	50 VA pilot duty @ 24 V 4.4 A running @ 120 V	Screw terminal	screw terminal	Buna-N (NBR) Rubber Ball
* TRADELINE models • SUPER TRADELINE models										

Hydronic Heating—Zone Valves

V8043 Two-Position Normally Open Zone Valves



Dimension Diagram

See diagram on page 151

Type: Zone Valve, Unitary

Type of Control: Electric

Actuator Electrical Rating (Voltage, Frequency): 24 Vac, 50/60 Hz

De-energized Position: Normally open

Fluid Temperature Range: 40 F to 200 F (5 C to 93 C)

Nominal Timing (sec, min): 15 sec

Power Consumption: 7.7 VA

Maximum Static Pressure: 125 psi (862 kPa)

Maximum Ambient Temperature: 125 F (52 C)

Valve action: Spring Return

Valve Body Material: Brass

Stem Materials: Stainless Steel

ON-OFF and two-way low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water, and some models for steam.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.
- Chilled water models available for cooling and heating applications.

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water.

Approvals:

Underwriters Laboratories, Inc: UL Listed

Accessories:

272708A 1/2 in. inverted flare to 1/2 in. sweat adapter

272708B 1/2 in. inverted flare to 3/4 in. sweat adapter

Replacement Parts:

272742A Replacement ball plug, large O-ring and four screws.

272756A Replacement O-rings; package of five.

802360JA Replacement Motor - 24 V, 50-60 Hz

802360UA Replacement Motor - 24 V, 50-60 Hz, Class F

Product Number	Pipe Connection Size (in.)	Pipe Connections	Application	Flow Capacity		Maximum Close-off Pressure		Electrical Connections		Ball Plug Materials
				Cv	Kv	(psi)	(kPa)	(inch)	(mm)	
V8043B1019	1/2 in.	Sweat	Hydronic	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043B1027	3/4 in.	Sweat	Hydronic	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043B1076	3/4 in.	NPT	Hydronic	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8043J1003	1/2 in.	Sweat	15 psi low pressure steam	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	EPDM Rubber Ball
V8043J1029	1/2 in.	NPT	15 psi low pressure steam	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	EPDM Rubber Ball
V8043J1037	3/4 in.	NPT	15 psi low pressure steam	3.5 Cv	3 Kv	20 psi	138 kPa	18 in. leads	457 mm leads	EPDM Rubber Ball

* TRADELINE models • SUPER TRADELINE models

V8044 Two-Position Diverting Zone Valves



Dimension Diagram
See diagram on page 151

Type: Diverting Valve, Unitary
Type of Control: Electric
Actuator Electrical Rating (Voltage, Frequency): 24 Vac, 50/60 Hz
De-energized Position: Port A normally closed
Fluid Temperature Range: 40 F to 200 F (5 C to 93 C)
Nominal Timing (sec, min): 30 sec
Power Consumption: 7.7 VA
Maximum Static Pressure: 125 psi (862 kPa)
Maximum Ambient Temperature: 125 F (52 C)
Valve action: Spring Return
Valve Body Materials: Brass
Stem Materials: Stainless Steel

ON-OFF and diverting low voltage valves consist of an actuator and valve assembly for controlling the flow of hot water, and some models for steam.

- Manual opener (on all models, except straight-through, normally open valves) for valve operation on power failure; valve returns to automatic position when power is restored.
- All models may be installed without disassembling the valve.
- Compact construction for easy installation.
- Complete powerhead may be removed or replaced without breaking line connections or draining the system.
- Actuator motor may be replaced without removing the valve body or draining the system.
- Chilled water models available for cooling and heating applications.

Comments: Use this valve in closed loop hydronic systems that do not contain dissolved oxygen in system water, such as fresh water from frequent source of makeup water.

Approvals:
Underwriters Laboratories, Inc: UL Listed

Accessories:
272708A 1/2 in. inverted flare to 1/2 in. sweat adapter
272708B 1/2 in. inverted flare to 3/4 in. sweat adapter

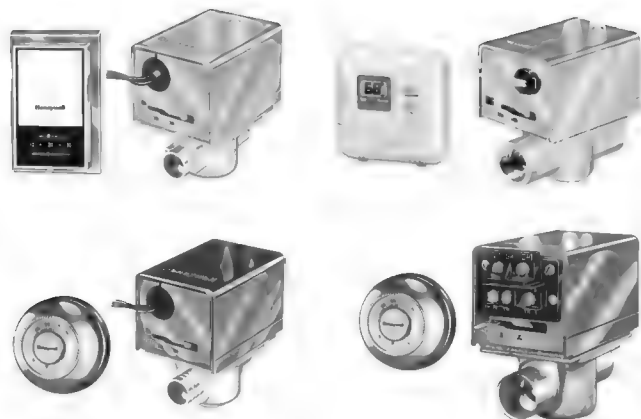
Replacement Parts:
272742A Replacement ball plug, large O-ring and four screws.
272756A Replacement O-rings; package of five.
802360JA Replacement Motor - 24 V, 50-60 Hz
802360UA Replacement Motor - 24 V, 50-60 Hz, Class F

Product Number	Pipe Connection Size (in.)	Pipe Connections	Flow Capacity		Maximum Close-off Pressure		Aux Switch Ratings	Electrical Connections		Ball Plug Materials
			Cv	Kv	(psi)	(kPa)		(inch)	(mm)	
V8044A1002	1/2 in.	Flare	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1010	1/2 in.	Sweat	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1044	3/4 in.	Sweat	7 Cv	6 Kv	10 psi	69 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1051	1/2 in.	Sweat	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1127	1/2 in.	Sweat	4 Cv	3.4 Kv	20 psi	138 kPa	—	30 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1135	1/2 in.	NPT	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044A1143	3/4 in.	NPT	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044B1018	1/2 in.	Sweat	4 Cv	3.4 Kv	20 psi	138 kPa	—	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044E1003	1/2 in.	Sweat	4 Cv	3.4 Kv	20 psi	138 kPa	3.0 A running @ 120 V 50 VA pilot duty @ 24 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball
V8044E1011	3/4 in.	Sweat	7 Cv	6 Kv	10 psi	69 kPa	3.0 A running @ 120 V 50 VA pilot duty @ 24 V	18 in. leads	457 mm leads	Buna-N (NBR) Rubber Ball

* TRADELINE models • SUPER TRADELINE models

Hydronic Heating—Zone Valves

Y496 Zone Control Builder Packs



Contain devices necessary for temperature control of a single zone in a hydronic heating system.

Thermostat Electrical Ratings: 24 V, 50-60 Hz

Valve Action: Spring return to close

Valve Aux Switch Ratings: 4.4 A running @ 120 V, 50 VA pilot duty @ 24 V

Valve Body Pattern: 2-Way

Valve Electrical Ratings: 24 Vac, 50-60 Hz

- Include thermostat with special heat anticipator designed for best performance when used with the V8043 Zone Valve.
- Require 24 V power source.
- Custom packed with 10 Valves and 10 thermostats per carton.

	Includes
Y496A1009	V8043A1011, T822D1008
Y496A1017	V8043A1029, T822D1008
Y496A1025	V8043E1012, T822D1008
Y496A1033	V8043E1004, T822D1008
Y496A1041	V8043E1061, T822D1008
Y496A1074	V8043E1012, T822D2550
Y496A1082	V8043E1004, T822D2550
Y496A1090	V8043E1061, T822D2550
Y496B1016	V8043A1029, T87F2873
Y496B1024	V8043E1012, T87F2873
Y496B1040	V8043F1036, T87F2873
Y496C1007	V8043E1012, T8400B1018
Y496C1015	V8043E1061, T8400B1018

Valve Pipe Connections: Sweat

Comments: See V8043, T8400, T822, T87F for more details

Approvals:

Underwriters Laboratories, Inc: UL Listed: Models V8043A,B,E,J & V8044A,B,E; UL Component Recognized: V8043F

Product Number	Pipe Connection Size (in.)	Capacity		Electrical Connections	Maximum Close-off Pressure		Valve End Switch	Thermostat Application	Thermostat Temperature Range		Mounting	Thermostat Anticipator Adjustment	
		Cv	Kv		(psi)	(kPa)			(F)	(C)		Heating	Cooling
* Y496A1009	1/2 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	No	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1017	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	No	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1025	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1033	1/2 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1041	3/4 in.	8.0 Cv	6.9 Kv	18 in. leads	8 psi	55 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1074	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1082	1/2 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496A1090	3/4 in.	8.0 Cv	6.9 Kv	18 in. leads	8 psi	55 kPa	Yes	Single Stage Heating Only	55 to 95 F	13 to 35 C	Vertical	0.18 to 1.0 A	—
* Y496B1016	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	No	Single Stage Heating/Cooling	40 to 90 F	4 to 32 C	Round	0.1 to 1.2 A	0.0 to 1.5 A
* Y496B1024	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating/Cooling	40 to 90 F	4 to 32 C	Round	0.1 to 1.2 A	0.0 to 1.5 A
* Y496B1040	3/4 in.	3.5 Cv	3 Kv	Screw Terminal Block	20 psi	138 kPa	Yes	Single Stage Heating/Cooling	40 to 90 F	4 to 32 C	Round	0.1 to 1.2 A	0.0 to 1.5 A
* Y496C1007	3/4 in.	3.5 Cv	3 Kv	18 in. leads	20 psi	138 kPa	Yes	Single Stage Heating Only	40 to 99 F	4 to 39 C	Square	—	—
* Y496C1015	3/4 in.	8.0 Cv	6.9 Kv	18 in. leads	8 psi	55 kPa	Yes	Single Stage Heating Only	40 to 99 F	4 to 39 C	Square	—	—

* TRADELINE models • SUPER TRADELINE models

Y896 Zone Control Builder Packs



Contain devices necessary for temperature control of a single zone in a hydronic heating system.

- Includes thermostat with special heat anticipator designed for best performance when used with the VC8715AM1000 Valve.
- Require 24 V power source.

	Includes
Y896C1016	VC8715AM1000, T8400B1018

Thermostat Electrical Ratings: 24 V, 50-60 Hz

Maximum Static Pressure: 300 psi (kPa)

Valve Action: Drive open, Drive Close

Valve Aux Switch Ratings: 1.0 A running @ 120 V

Valve Body Material: Bronze

Valve Body Pattern: 2-Way

Valve Electrical Ratings: 24 Vac, 60 Hz

Valve Pipe Connections: Sweat

Comments: See VC8715AM1000, T8400B1018 for more details and specifications. Maximum 50% glycol in water

Approvals:

Canadian Standards Association: CSA Approved

Underwriters Laboratories, Inc: UL Listed

Product Number	Pipe Connection Size (in.)	Capacity		Electrical Connections	Maximum Close-off Pressure		Application	Temperature Range		Thermostat Mounting	Includes
		Cv	Kv		(psi)	(kPa)		(F)	(C)		
* Y896C1016	3/4 in.	5.8	5.0	1 meter cable	60	97	Single Stage Heating Only	40 to 99 F	4 to 39 C	Square	VC8715AM1000, T8400B1018

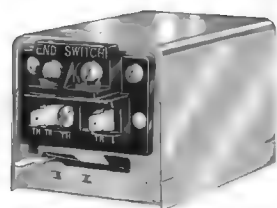
* TRADELINE models • SUPER TRADELINE models

Zone Valve Replacement Parts

OS Number	Description	Electrical Connections		Electrical Ratings
		Inch	mm	Voltage, Frequency
132184B	Replacement ball plug for V8043, V8044, V4043, V4044 valves (not for steam)			—
272708A	1/2 in. inverted flare to 1/2 in. sweat adapter			
272708B	1/2 in. inverted flare to 3/4 in. sweat adapter			
272708C	1/2 in. inverted flare to 1 in. sweat adapter			
802360JA	Replacement motor for V8043, V8044 Zone Valves	6 in. leads	152 mm leads	24 V, 50-60 Hz
802360LA	Replacement motor for V4043, V4044 Zone Valves	6 in. leads	152 mm leads	120 V, 60 Hz
802360MA	Replacement motor for V4043, V4044 Zone Valves	6 in. leads	152 mm leads	208 V, 60 Hz
802360NA	Replacement motor for V4043, V4044 Zone Valves	6 in. leads	152 mm leads	220V, 50 Hz / 240V, 60Hz
802360UA	Replacement motor for Fan Coil and Zone Valves	6 in. leads	152 mm leads	24 V, 50-60 Hz

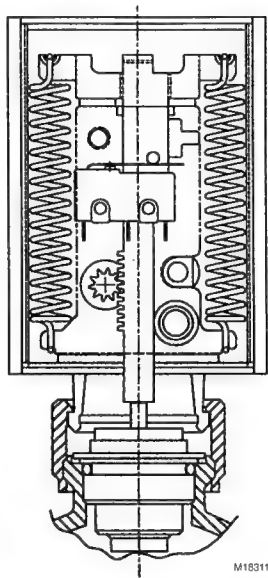
Hydronic Heating—Zone Valves

Replacement Heads for Zone Valves



OS Number	Electrical Connections		Electrical Connection Location	Electrical Ratings	Aux Switch Ratings	Maximum Ambient Temperature		Used With Valve Type	Used With Valve Action
	inch	mm				(F)	(C)		
40003916-021	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	2-Way V8043A	Spring return to close
40003916-024	18 in. leads	457 mm leads	Same side of manual lever	120 Vac 60 Hz	—	125 F	52 C	2-Way V4043A	Spring return to close
40003916-025	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	4.4 A running @ 120 V 50 VA pilot duty @ 24 V	125 F	52 C	Diverting V8044E	Spring return to close "A" port
40003916-026	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	4.4 A running @ 120 V 50 VA pilot duty @ 24 V	125 F	52 C	2-Way V8043E	Spring return to close
40003916-027	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	2-Way V8043B	Spring return to open
40003916-030	18 in. leads	457 mm leads	Same side of manual lever	240 Vac, 60 Hz	—	125 F	52 C	2-Way V4043B	Spring return to open
40003916-031	18 in. leads	457 mm leads	Same side of manual lever	120 Vac 60 Hz	—	125 F	52 C	2-Way V4043B	Spring return to open
40003916-032	18 in. leads	457 mm leads	On opposite side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	Diverting V8044A	Spring return to close "A" port
40003916-034	18 in. leads	457 mm leads	On opposite side of manual lever	240 Vac, 50 Hz	—	125 F	52 C	Diverting V4044A	Spring return to close "A" port
40003916-035	18 in. leads	457 mm leads	On opposite side of manual lever	220 Vac 50 Hz 240 Vac, 60 Hz	—	125 F	52 C	Diverting V4044A	Spring return to close "A" port
40003916-037	18 in. leads	457 mm leads	On opposite side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	Diverting V8044A	Spring return to close "A" port
40003916-040	18 in. leads	457 mm leads	On opposite side of manual lever	120 Vac 60 Hz	—	125 F	52 C	Diverting V4044B	Spring return to close "A" port
40003916-041	18 in. leads	457 mm leads	Same side of manual lever	120 Vac 60 Hz	—	125 F	52 C	2-Way V4043E	Spring return to close
40003916-043	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	4.4 A running @ 120 V 50 VA pilot duty @ 24 V	125 F	52 C	Diverting V8044E	Spring return to close "A" port
40003916-044	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	Diverting V8044B	Spring return to close "A" port
40003916-045	18 in. leads	457 mm leads	Same side of manual lever	120 Vac 60 Hz	—	125 F	52 C	Diverting V4044B	Spring return to close "A" port
40003916-046	18 in. leads	457 mm leads	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	—	125 F	52 C	Diverting V8044B	Spring return to close "A" port
40003916-047	96 in. leads	2438 mm leads	Same side of manual lever	120 Vac 60 Hz	—	125 F	52 C	Diverting V4044A	Spring return to close "A" port
40003916-048	screw terminal block	screw terminal block	Same side of manual lever	24 Vac, 50 Hz 24 Vac, 60 Hz	4.4 A running @ 120 V 50 VA pilot duty @ 24 V	125 F	52 C	2-Way V8043F	Spring return to close

PowerTrack™—Motorized Zone Valves



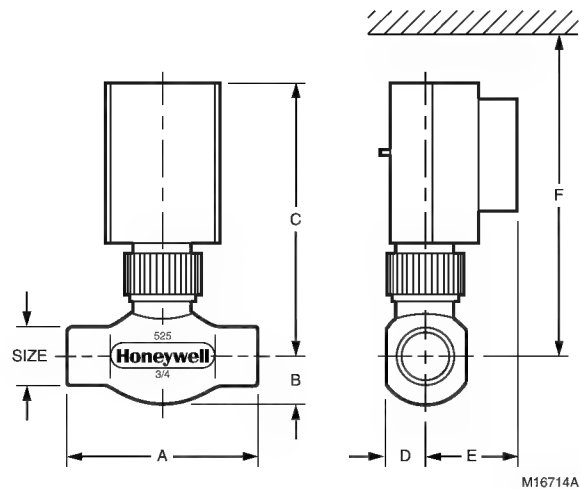
Patented long life rack and pinion design with built in balancing valve.



Pre-balance valve

Honeywell PowerTrack is the first linear zone valve with a built-in balancing plug that permits pre-balancing for each zone.

- Rack and pinion linear design.
- Fast acting, 10 seconds to open, 5 seconds to close.
- Two piece rack design to extend service life.
- Low power consumption, 8 valves, 40 VA transformer.
- External valve position indicator.
- Quiet operation, no water hammer.
- Built-in tamper resistant balancing valve for pre-balancing.
- High torque, constant speed synchronous motor.
- Cooler running, longer life motor with heavy duty gearbox.
- Operator can be replaced without draining system.
- Manual opening feature.
- Replaceable valve cartridge.
- Large adjustable flow, 1/2 in. 3/4 in. Cv 5.8; 1 in. 7.0 Cv; 1-1/4 in. Cv 7.0.
- Motor CSA recognized.
- 4 wire operator with auxiliary switch.
- 2 wire without switch, 24 in. leads.
- Compatible with programmable thermostats.
- Bronze casting; brass/stainless trim.
- USA Patent Nos. 5,529,282; D369,650; 5,941,500; 6,032,924
- UK Patent No. 2,052,382
- 24 VAC, 60 Hz, 0.25 ampere.



Size (in.)	Dimensions											
	A		B		C		D		E		F	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
3/4	3-5/16	84.1	13/16	20.5	4-11/16	119.1	11/16	17.4	1-19/32	40.5	5-1/2	139.7
1	3-13/16	96.8	1	25	4-11/16	119.1	13/16	20.5	1-19/32	40.5	5-1/2	139.7
1-1/4	3-13/16	96.8	1	25	4-11/16	119.1	13/16	20.5	1-19/32	40.5	5-1/2	139.7

Application: Residential or commercial zoning for hot water heating or chilled water air conditioning systems, fan coil units or indirect water heater service.

Maximum Temperature: 240 F (115 C)

Maximum Water Pressure: 125 psi (862 kPa)

Motor Ratings (Vac): 24 Vac

Motor Ratings (Hz): 60 Hz

Valve Body Material: Bronze

Product Number	Size (in.)	Type of Connection	Maximum Shutoff Pressure		Weight		Auxiliary Switch
			(psi)	(kPa)	(lb)	(kg)	
MZV524E-T	1/2 in.	NPT	20 psi	138 kPa	1.9 lb	0.8 kg	Yes
MZV524-T	1/2 in.	NPT	20 psi	138 kPa	1.9 lb	0.8 kg	No
MZV525	3/4 in.	Sweat	20 psi	138 kPa	1.7 lb	0.8 kg	No
MZV525E	3/4 in.	Sweat	20 psi	138 kPa	1.7 lb	0.8 kg	Yes
MZV525E-T	3/4 in.	NPT	20 psi	138 kPa	2.0 lb	0.9 kg	Yes
MZV525-T	3/4 in.	NPT	20 psi	138 kPa	2.0 lb	0.9 kg	No
MZV526	1 in.	Sweat	17.5 psi	121 kPa	2.0 lb	0.9 kg	No

Hydronic Heating—Zone Valves

Product Number	Size (in.)	Type of Connection	Maximum Shutoff Pressure		Weight		Auxiliary Switch
			(psi)	(kPa)	(lb)	(kg)	
MZV526E	1 in.	Sweat	17.5 psi	121 kPa	2.0 lb	0.9 kg	Yes
MZV526E-T	1 in.	NPT	17.5 psi	121 kPa	2.5 lb	1.4 kg	Yes
MZV526-T	1 in.	NPT	17.5 psi	121 kPa	2.5 lb	1.4 kg	No
MZV527	1 1/4 in.	Sweat	17.5 psi	121 kPa	2.2 lb	1.0 kg	No
MZV527E	1 1/4 in.	Sweat	17.5 psi	121 kPa	2.2 lb	1.0 kg	Yes

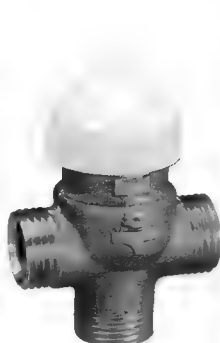
PowerTrack™ Replacement Parts

OS Number	Description	Used With
MZV441E-RP	Operator fits M30 x 1 mm straddler without switch	
MZV441-RP	Operator fits M30 x 1 mm straddler with switch	
MZV520-RP	Operator for MZV525E, MZV526E, MZV527E zone valves with auxiliary switch	MZV525E, MZV526E, MZV527E
MZV521-RP	Operator for MZV525, MZV526, MZV527 zone valves without auxiliary switch	MZV525, MZV526, MZV527
MZV525-RP	Replacement valve cartridge for 1/2 in. and 3/4 in. MZV525, MZV525E	MZV525, MZV525E
MZV526-RP	Replacement valve cartridge for 1 in. and 1 1/4 in. MZV526, MZV526E, MZV527, MZV527E	MZV526, MZV526E, MZV527, MZV527E

Fan Coil Valves



Optional
PowerTrack
Operator



3-way manual



2-way with
PowerTrack

Honeywell PowerTrack Valves, Compact two and three way valves for use in fan coil units or as a small capacity zone valve in heating, radiant or cooling systems. Max working pressure 230 psi, max. temp. 240 F/115 C. Brass/ stainless steel construction.

- Sweat and NPT tailpieces available.

Application: Fan Coil Valve
Maximum Temperature: 240 F (115 C)
Motor Ratings (Vac): 24 Vac

Product Number	Size (in.)	Body Pattern	Type of Connection	Maximum Shutoff Pressure		Weight
				(psi)	(kPa)	(lb)
FCV2050S	1/2 in.	Two-way	Sweat	29 psi	200 kPa	0.37
FCV2050TS	1/2 in.	Two-way	Threaded	29 psi	200 kPa	0.54
FCV2050TT	1/2 in.	Two-way	Threaded	29 psi	200 kPa	0.61
FCV2075TS	3/4 in.	Two-way	Sweat	20 psi	138 kPa	0.82
FCV2075TT	3/4 in.	Two-way	Threaded	20 psi	138 kPa	0.86
FCV3050TS	1/2 in.	Three-way	Sweat	29 psi	200 kPa	0.69 lb
FCV3050TT	1/2 in.	Three-way	Threaded	29 psi	200 kPa	0.78 lb
FCV3075TS	3/4 in.	Three-way	Sweat	20 psi	138 kPa	1.07 lb
FCV3075TT	3/4 in.	Three-way	Threaded	20 psi	138 kPa	1.13 lb

Hydronic Heating—Zone Valves

Product Number	Number of Zones	Main		Branch		Controls	Comments
		Size (in.)	Type of Connection	Size (in.)	Type of Connection		
S2Z3S3	3	1 1/4 in.	NPT/Sweat	3/4 in.	Sweat	Return Manifold	With Controls
S2Z4S3	4	1 1/4 in.	NPT/Sweat	3/4 in.	Sweat	Return Manifold	With Controls
S2Z3T3	3	1 1/4 in.	NPT/Sweat	3/4 in.	Threaded	Return Manifold	With Controls
S2Z4T3	4	1 1/4 in.	NPT/Sweat	3/4 in.	Threaded	Return Manifold	With Controls
SH4S	4	1 1/4 in.	NPT/Sweat	3/4 in.	Sweat	4 Zone header	Header Only
SH4T	4	1 1/4 in.	NPT/Sweat	3/4 in.	Threaded	4 Zone header	Header Only
SZ4S1L	See SI/IS 590 for information					Snow Melt manifold, no controls or operators	

SparcoZone²™ Replacement Parts

OS Number	Description	Comments
S2Z8889-RP	Hydronic Zone valve control only	For more information see R8889 Technical sheet
MZV520-RP	PowerTrack™ Operator	See SD/IS 525 when ordered separately
SZ001	PowerTrack™ Valve replacement Kit, Includes Control with Priority.	See SD/IS 525 when ordered separately
SZ002	PowerTrack™ Plug replacement Kit,	See SD/IS 525 when ordered separately
SZ07-070	PowerTrack Conversion Kit, Includes Control with Priority.	

FlowCheck—Gravity Check Valves

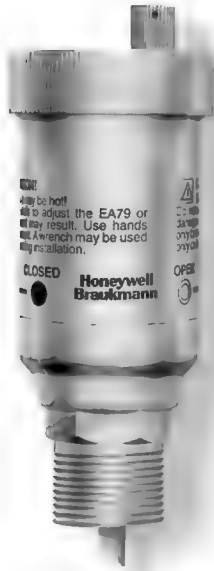


Honeywell FlowChecks prevent the flow of water to any part of a system when the pump is shut off. They permit summer/winter operation of indirect water heaters. Honeywell FlowChecks are easy to clean. Just unscrew the top of the valve for inspection and cleaning. Bronze and brass construction. To allow gravity flow, the FlowCheck can be changed to manual operation by turning the hand wheel counterclockwise (open position).

Type: Horizontal
Materials, Body: Brass

Product Number	Size (in.)	Connection Type	Dimensions, Approximate	Weight	
			(inch)	(lb)	(kg)
FC200SB	3/4 in.	Sweat	3 11/16 in. high, 3 5/16 in. length, 1 1/2 in. wide	1.1 lb	0.5 kg
FC201SB	1 in.	Sweat	3 11/16 in. high, 3 5/16 in. length, 1 1/2 in. wide	1.5 lb	0.68 kg

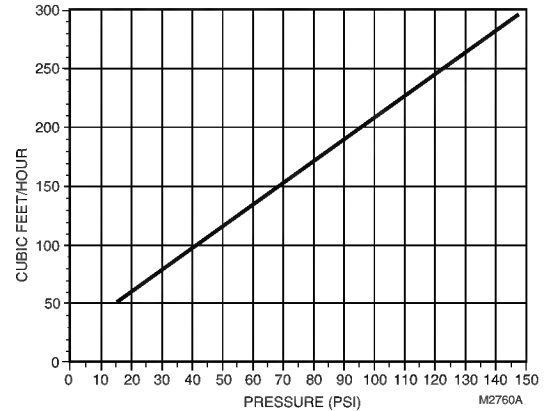
EA79 Industrial Air Vents



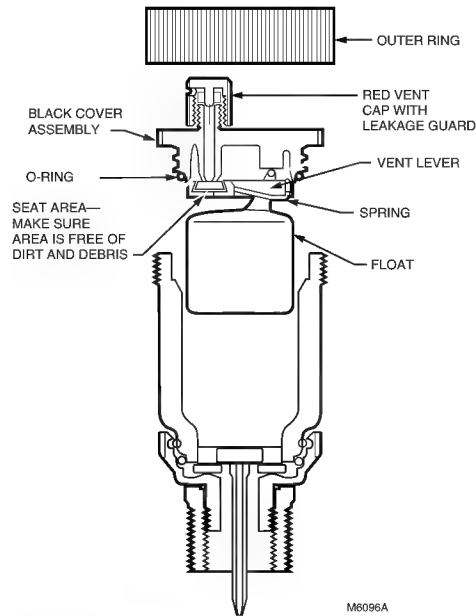
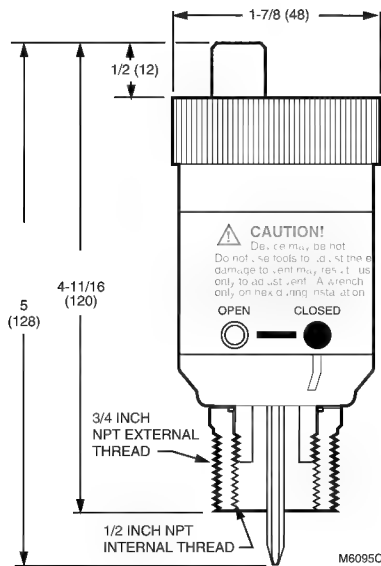
Purges air from high pressure mains and equipment in closed hot or cold water systems.

- Built-in shutoff valve for servicing without system shutdown.
- Built-in vacuum breaker.
- Removable float/valve assembly for easy servicing.
- Safety drain connection and vent cap with leakage guard.
- Brass shell construction.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing propylene glycol, mineral oils, or petroleum-based oils.
- Replaces Hoffman # 79 or Dole # 75 Vents.
- Maintains quiet and efficient operation.

EA79 capacities.



Dimension Diagrams



Application: Hydronics

Corrosion Resistant: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol, mineral oils, or petroleum-based oils.

Temperature Ratings: 250 F (120C)

Accessories:

Q122A1001 Safe waste Connector

Replacement Parts:

P79B1003 Replacement O-ring, cover and internals

Product Number	Connection Type	Maximum Pressure Ratings		Description
		(psi)	(kPa)	
EA79A1004	3/4 in. male NPT pipe thread with 1/2 in. female NPT pipe thread	150 psi	1050 kPa	Industrial automatic air vent
EA79A1012	3/4 in. male NPT pipe thread with 1/2 in. female NPT pipe thread	150 psi	1050 kPa	Industrial automatic air vent with safe waste connector (Q112A)

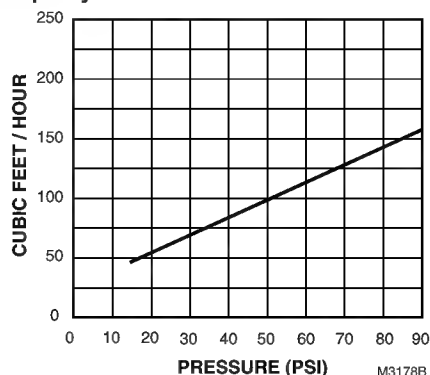
Hydronic Heating—Air Vents and Eliminators

EA122A Automatic Air Vent for Heating System Applications



- Includes removable float/valve assembly for easy servicing.
- Not for use in steam systems.
- Body, cover and float assembly made of thermoplastics.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing light concentrations of propylene glycol, mineral oils, or petroleum-based oils.
- Oil resistant seal.
- NBR seat disc and O-ring.

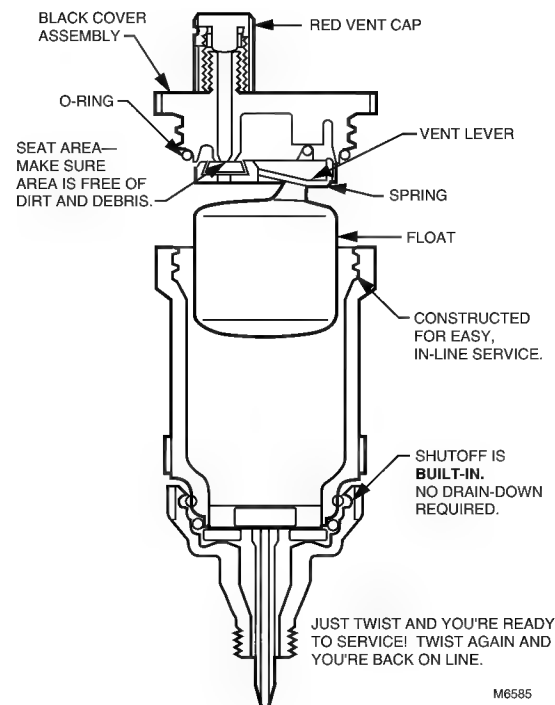
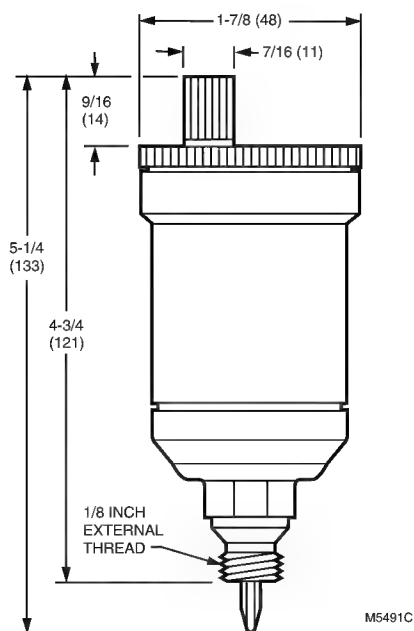
EA122 Air Capacity.



Purges air trapped in closed hot or cold water systems.

- Maintains quiet and efficient operation.
- Built-in brass shutoff valve for servicing without system shutdown.
- Built-in vacuum breaker.
- Leakage guard safeguards operation.

Dimension Diagrams



Application: Hydronics

Corrosion Resistant: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol, mineral oils, or petroleum-based oils.

Temperature Ratings: 212 F (100 C)

Accessories:

Q122A1001 Safe waste Connector

Replacement Parts:

0900761 VENTING CAP

P122B1002 Replacement O-ring, cover and internals

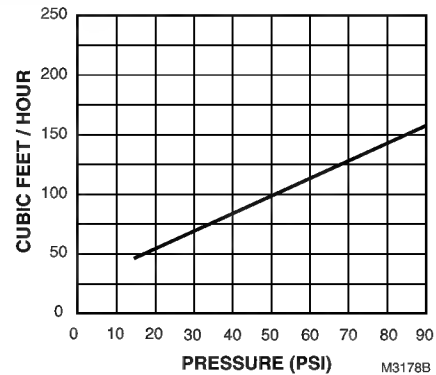
Product Number	Connection Type	Maximum Pressure Ratings		Description
		(psi)	(kPa)	
EA122A1002	1/8 in. NPT male thread	90 psi	630 kPa	Automatic air vent with built-in shutoff valve and leakage guard, oil resistant

EA122A Automatic Air Vent for Non-Heating System Applications



- Includes removable float/valve assembly for easy servicing.
- Not for use in steam systems.
- Body, cover and float assembly made of thermoplastics.
- Internal parts made of corrosion-resistant and chemical-resistant materials for use with water systems containing light concentrations of propylene glycol, mineral oils, or petroleum-based oils.
- Oil resistant seal.
- NBR seat disc and O-ring.

EA122 Air Capacity.



Purges air trapped in closed hot or cold water systems.

- Maintains quiet and efficient operation.
- Built-in brass shutoff valve for servicing without system shutdown.
- Built-in vacuum breaker.
- Leakage guard safeguards operation.

Dimension Diagrams

See diagrams on page 166

Application: Water Treatment

Corrosion Resistant: Internal parts made of corrosion-resistant and chemical-resistant materials for use with hydronic systems that may contain concentrations of propylene or ethylene glycol(not resistant to mineral oils or petroleum-based oils).

Temperature Ratings: 212 F (100 C)

Accessories:

Q122A1001 Safe waste Connector

Replacement Parts:

0900761 VENTING CAP

P122B1010 Replacement O-ring, cover and internals

Product Number	Connections Type	Maximum Pressure Ratings		Description
		(psi)	(kPa)	
EA122A1028	1/8 in. NPT male thread	90 psi max.	630 kPa	Automatic air vent with built-in shut off valve; EPDM seat disc and O-ring.

Air Vent Accessories

OS Number	Description	Used With
P122B1002	Replacement O-ring	EA122A1002
P122B1010	Replacement O-ring	EA122A1002, EA122A1028
P79B1003	Replacement O-ring	EA122A1028, EA79A1004
Q122A1001	Safe waste Connector	EA79A1004, EA122A, EA79

Hydronic Heating—Air Vents and Eliminators

GoldTop™—Universal Air Vent for Residential and Commercial Heating and Cooling Systems



Installers, wholesalers and OEM's can now stock one vent for all their venting needs between 1 and 150 psi systems and obtain the highest venting performance. Honeywell has reinvented the vent! Air vents have been removing air from heating and cooling systems for decades. Some were better than others. Many stopped venting after initial filling. No one has, up to now, been able to design a low cost vent that performs at both low and high pressures. It was always one or the other. Honeywell's revolutionary patented fulcrum design offers a venting rate of 3-4 times that of other products. It works when others stop venting at higher pressures. The GoldTop offers convenient, one-fits-all concept and is competitively priced.

- Patent No. 5,988,201.

Dimensions, Approximate: 1 27/32 in. high, 3 1/4 in. long (24 mm high, 83 mm long)

Material: Brass

Maximum Pressure: 150 psi (1034 kPa)

Maximum Temperature: 240 F (115 C)

Product Number	Connection Size	Connection Type	Weight	
			(lb)	(kg)
FV180	1/8 in.	NPT	0.4 lb	0.18 kg
FV180A	1/4 in.	NPT	0.4 lb	0.18 kg
FV183	3/4 in.	NPT	0.4 lb	0.18 kg

MaxiVent™—Air Vent for heating and cooling systems



The Maxivent features a low profile, fit anywhere solid brass body and cover, and a high temperature polypropylene float.

Dimensions, Approximate: 2 in. high, 1 5/32 in. diameter (51 mm high, 29.4 mm diameter)

Materials: Brass

Maximum Operating Temperature: 240 F

Maximum Pressure: 150 psi (1034 kPa)

Product Number	Size (in.)	Connection Type	Weight	
			(lb)	(kg)
FV147	1/8 in.	NPT	0.12 lb	0.05 kg
FV147A	1/4 in.	NPT	0.12 lb	0.05 kg

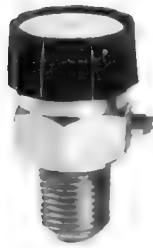
Hydronic Heating—Air Vents and Eliminators

Hygrovent—Automatic Vent for Hot Water or Steam

HV196



HV190



The Honeywell Hygrovent is an automatic air vent for hot water and steam systems. Install in baseboards, radiators, convectors and high points in piping systems to remove air. The nickel-plated valve has a quick venting design and a positive shut-off ball check.

Materials: Nickel Plated

Maximum Operating Temperature: 240 F (115 C)

Maximum Pressure: Water: 125 psi; Steam: 10 psi

Product Number	Size (in.)	Connection Type	Dimensions, Approximate		Weight	
			(inch)	(mm)	(lb)	(kg)
HV190	1/8 in.	NPT	1 27/32 in. high, 3 1/4 in. long	24 mm high, 83 mm long	0.6 lb	0.03 kg
HV196	1/8 in.	NPT	1 7/32 in. long	—	0.3 lb	0.14 kg

AP400—Air Purger



Air Separator for closed heating systems

Materials: Cast Iron

Maximum Operating Temperature: 275 F (135 C)

Maximum Pressure: 125 psi (862 kPa)

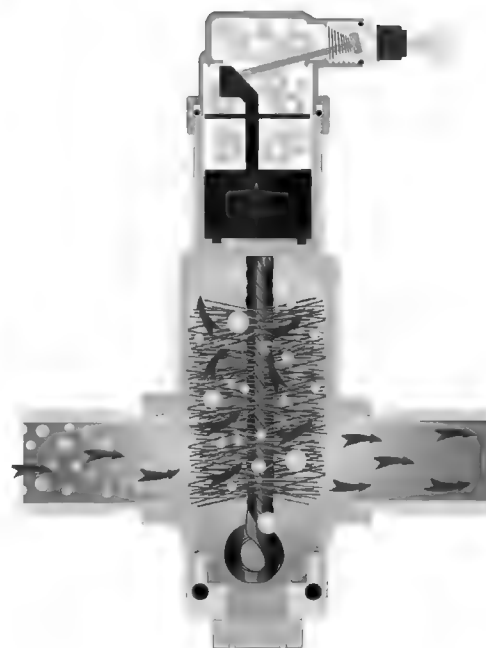
Dimensions, Approximate: 6 in. long, 4 in. high, 2 1/2 in. deep
(152 mm long, 102 mm high, 64 mm deep)

Product Number	Size (in.)	Connection Size (in.)	Connection Type	Weight	
				(lb)	(kg)
AP400	1 in.	Bottom: 1/2 in.; Top: 1/8 in.	NPT	4 lb	1.8 kg
AP401	1 1/4 in.	Bottom: 1/2 in.; Top: 1/8 in.	NPT	4 lb	1.8 kg
AP402	1 1/2 in.	Bottom: 1/2 in.; Top: 1/8 in.	NPT	4 lb	1.8 kg

Hydronic Heating—Air Vents and Eliminators

SuperVent™ Air Eliminator—Eliminates Air from Hydronic Heating Systems without Bleeding

How it works



Conventional automatic air vents installed in Hydronic heating systems can leak and cause inefficient system operation. To effectively eliminate air from the system without bleeding, air bubbles need to be vented. The NEW Honeywell SuperVent purges air through a no clog vent assembly that controls dirt and debris to minimize air vent fouling.

- No clog vent
- Dirt and Debris resistant
- 360 degree adjustable collar ring for installation flexibility
- Stainless steel concentrator which eliminates gurgling noise
- Bronze body for rigid construction
- Threaded and sweat connections

Applications: Residential or Commercial Zoning for hot water heating or chilled water air conditioning systems, fan coil units or indirect water heater service.

Maximum Pressure: 125 psi (826 kPa)

Maximum Operating Temperature: 204 F (110 C)

Product Number	Size (in.)	Connection Type	Capacity (Cv)	Dimensions, Approximate		Maximum GPM	Weight	
				(inch)	(mm)		(lb)	(kg)
PV075	3/4 in.	NPT	13 Cv	7.4 in. high, 2.7 in. long, 1.9 in. wide	—	10	2.0 lb	0.9 kg
PV075S	3/4 in.	Sweat	13 Cv	7.4 in. high, 2.7 in. long, 1.9 in. wide	—	10	2.0 lb	0.9 kg
PV100	1 in.	NPT	22 Cv	8.1 in. high, 3.2 in. long, 2.1 in. wide	—	16	2.75 lb	1.25 kg
PV100S	1 in.	Sweat	22 Cv	8.1 in. high, 3.2 in. long, 2.1 in. wide	—	16	2.75 lb	1.25 kg
PV125	1 1/4 in.	NPT	38 Cv	8.4 in. high, 3.7 in. long, 2.5 in. wide	—	28	3.5 lb	1.6 kg
PV125S	1 1/4 in.	Sweat	38 Cv	8.4 in. high, 3.7 in. long, 2.5 in. wide	—	28	3.5 lb	1.6 kg
PV150	1 1/2 in.	NPT	53 Cv	9.7 in. high, 4.3 in. long, 3.1 in. wide	—	38	5.0 lb	2.27
PV200	2 in.	NPT	95 Cv	10.7 in. high, 5.2 in. long, 4 in. wide	—	62	8.0 lb	3.64 kg
PVU075	3/4 in.	NPT	3.6 Cv	7.8 in. high, 2.7 in. long, 1.9 in. wide	—	10	2.1 lb	0.95 kg
PVU100	1 in.	NPT	6.2 Cv	8.4 in. high, 3.2 in. long, 2.1 in. wide	—	16	2.75 lb	1.25 kg
PVU125	1 1/4 in.	NPT	10.5 Cv	8.9 in. high, 3.7 in. long, 2.5 in. wide	—	28	3.6 lb	1.64 kg
PVU150	1 1/2 in.	NPT	14.3 Cv	10 in. high, 4.3 in. long, 3.1 in. wide	—	38	5.2 lb	2.36 kg

Hydronic Heating—Air Vents and Eliminators

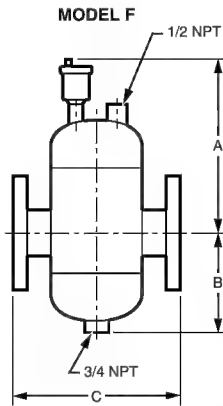
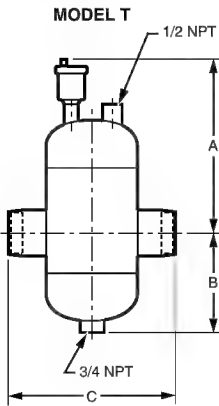
SuperVent™—The Best Commercial Air Eliminator. Removes All Trapped Air, Micro Bubbles and Dirt from Heating, Cooling and Domestic Water Systems.



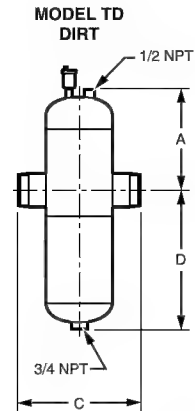
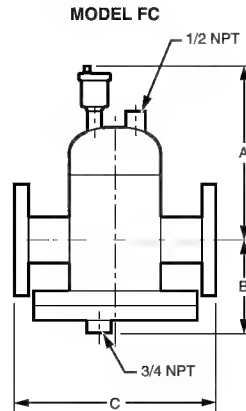
During the filling, maintenance or through oxygen infiltration, air is introduced into every hydronic heating/cooling system. To function properly, the air must be eliminated. The Honeywell Supervent slows the velocity of the water in its enlarged chamber, where the water impacts onto a stainless steel dynamic concentrator. The concentrator merges bubbles and micro bubbles, which then float to the top from where they are vented to the outside. The high capacity vent keeps the water level below the venting point for a clean vent nozzle.

- Guarantees fast startups and eliminates "No Heat" call backs.
- Helps prevent corrosion of system by air elimination.
- Fully serviceable, top to bottom.
- Low pressure drop, high Cv bi-directional flow.
- Universal design 3/4 in. -1-1/2 in. NPT for vertical risers.
- Sweat connections for sizes 3/4 in.-1-1/4 in.
- Bronze/stainless construction. 3 year warranty.
- Made in USA. US Patent No. 5,490,874.
- 1/2 in. bottom connections for Honeywell expansion tanks, or connect blow-down valve in dirty systems for dirt removal.
- Dynamic concentrator has three times more air/collection power than the static devices.

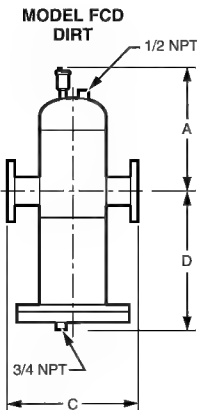
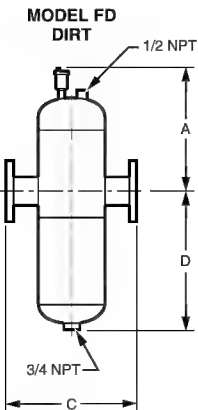
Dimension Diagrams



M16717



M16718



M16719

		Dimensions (in.)							
	Size (in.)	A		B		C		D [‡]	
		in.	mm	in.	mm	in.	mm	in.	mm
T model	2in.; 2 1/2 in.	11-1/16	281	6-3/16	157.2	10-1/8	257.2	10	254
	3 in.; 4 in.	15-5/8	238	7-31/32	172.2	15-1/2	393.7	13	330.2
F Model	2in.; 2 1/2 in.	11-1/16	281	6-3/16	157.2	10-1/4	260.3	10	254
	3 in.; 4 in.	15-5/8	238	7-31/32	172.2	16	406.4	13	330.2
	5 in.; 6 in.	21	533.4	11-3/32	281.8	24	609.6	18-1/2	469.9
	8 in.	25-27/32	656.4	12-31/32	295.2	30	762	24	609.6
FC Model	2 in.	11-1/16	281	5-27/32	148.4	12-1/4	311.1	10	254
	2-1/2 in.	11-1/16	281	5-27/32	148.4	12-1/2	317.5	10	254
	3 in.; 4 in.	15-5/8	238	7-3/8	187.3	16	406.4	13	330.2
	5 in.; 6 in.	11-1/16	281	9-27/32	192.9	24	609.6	18-1/2	469.9
	8 in.	15-5/8	238	11-7/8	301.6	30	762	24	609.6

[‡] Add D suffix for dirt model, i.e. PV500FD. D dimensions replace B dimensions for dirt model.

Hydronic Heating—Air Vents and Eliminators

Applications: Residential or Commercial Zoning for hot water heating or chilled water air conditioning systems, fan coil units or indirect water heater service.

Materials: bronze

Maximum Operating Temperature: 240 F (115 C)

Maximum Pressure: 125 psi (862 kPa)

Product Number	Size (in.)	Connection Size (in.)	Connection Type	Capacity (Cv)	Maximum Diameter		Weight	
					(inch)	(mm)	(lb)	(kg)
PV200F	2 in.	3/4 in. NPT	Flanged	95 Cv	5 5/8 in.	142.2 mm	31.5 lb	14.29 kg
PV200FC	2 in.	3/4 in. NPT	Flanged Cleanable	95 Cv	10 in.	254 mm	64 lb	29.03 kg
PV200T	2 in.	3/4 in. NPT	NPT	95 Cv	5 5/8 in.	142.2 mm	22 lb	9.98 kg
PV250F	2 1/2 in.	3/4 in. NPT	Flanged	140 Cv	5 5/8 in.	142.2 mm	37 lb	16.78 kg
PV250FC	2 1/2 in.	3/4 in. NPT	Flanged Cleanable	140 Cv	10 in.	254 mm	70 lb	31.75 kg
PV250T	2 1/2 in.	3/4 in. NPT	NPT	140 Cv	5 5/8 in.	142.2 mm	23 lb	10.43 kg
PV300F	3 in.	3/4 in. NPT	Flanged	215 Cv	8 5/8 in.	218.4 mm	66 lb	29.94 kg
PV300FC	3 in.	3/4 in. NPT	Flanged Cleanable	215 Cv	13 1/2 in.	342.9 mm	137 lb	62.14 kg
PV300T	3 in.	3/4 in. NPT	NPT	215 Cv	8 5/8 in.	218.4 mm	50 lb	22.68 kg
PV400F	4 in.	3/4 in. NPT	Flanged	360 Cv	8 5/8 in.	218.4 mm	78.5 lb	35.61 kg
PV400FC	4 in.	3/4 in. NPT	Flanged Cleanable	360 Cv	13 1/2 in.	342.9 mm	150 lb	68.04 kg
PV400T	4 in.	3/4 in. NPT	NPT	360 Cv	8 5/8 in.	218.4 mm	52.5 lb	23.81 kg
PV500F	5 in.5 in.	3/4 in. NPT	Flanged	590 Cv	12 13/16 in.	325.1 mm	147 lb	66.68 kg
PV500FC	5 in.5 in.	3/4 in. NPT	Flanged Cleanable	590 Cv	19 in.	482.6 mm	310 lb	140.62 kg
PV600F	6 in.	3/4 in. NPT	Flanged	860 Cv	12 13/16 in.	325.1 mm	158 lb	71.67 kg
PV600FC	6 in.	3/4 in. NPT	Flanged Cleanable	860 Cv	19 in.	482.6 mm	320 lb	145.15 kg
PV800F	8 in.	3/4 in. NPT	Flanged	1500 Cv	16 in.	406.4 mm	254 lb	115.21 kg
PV800FC	8 in.	3/4 in. NPT	Flanged Cleanable	1500 Cv	23 1/2 in.	596.9 mm	516 lb	234.06 kg

SuperVent Replacement Parts

Product Number	Size (in.)	Description
PV-001RP	3/4 in., 1 in., 1 1/4 in., 1 1/2 in., 2 in.	Replacement Air vent Assembly for Vertical Vent (Old Style)
PV-020RP	3/4 in., 1 in., 1 1/4 in., 1 1/2 in., 2 in.	Replacement Air vent Assembly for Horizontal Vent (New Style)

SV173 SuperVent™ Top Air Vent for Heating and Cooling Systems

The Supervent has high venting capacity and incorporates a check valve. Use with SuperVent PV Series products.



Applications: Automatic Air Vent

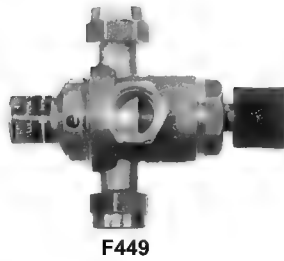
Materials: Brass

Maximum Pressure: 150 psi (1034 kPa)

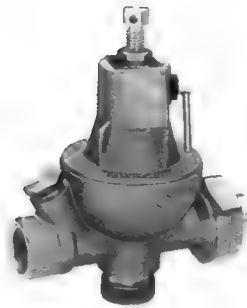
Product Number	Size (in.)	Connection Type	Dimensions, Approximate	Weight
			(inch)	(lb)
SV173	3/8 in.	NPT	3 in. high, 2 in. dia.	0.43 lb

Hydronic Heating—Air Vents and Eliminators

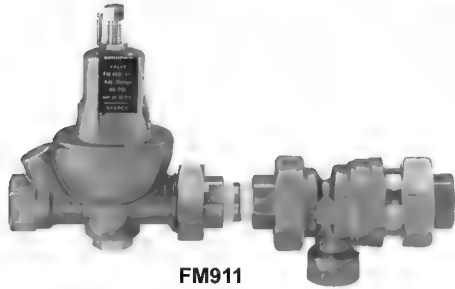
FM Boiler Fill Valves



F449



FM450/FM451



FM911

Pressure regulating valve for automatic control of boiler feed water.

Connection Type: NPT

Inlet Connection Size: 1/2 in.

Material (body): Brass

Size: 1/2 in.

Maximum Temperature: 212 F (100 C)

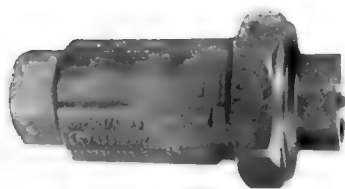
Product Number	Description	Regulating Pressure Range	Maximum Pressure		Inlet Connection Type	FAST Fill	Dimensions, Approximate (inch)	Weight (lb)
			(psi)	(kPa)				
F449	Pressure regulating valve for automatic control of boiler feed water.	7 psi to 45 psi	200 psi	1400 kPa	Female for tank connection; Male for air purger/Powervent	No	2 7/8 in. wide, 4 3/4 in. long	1.62 lb
FM450	Fast fill pressure regulating boiler feed valve with check valve.	4 psi to 60 psi	150 psi	1034 kPa	Union, Sweat	Yes	4 1/8 in. high, 5 5/16 in. long	1.8 lb
FM451	Fast fill pressure regulating boiler feed valve with check valve.	4 psi to 60 psi	150 psi	1034 kPa	Union, Threaded	Yes	4 1/8 in. high, 5 5/16 in. long	1.8 lb
FM911	Pressure reducing valve 12 psi preset and backflow preventer (FM451 and BP900 assembly)	4 psi to 60 psi	150 psi	1034 kPa	Union, Threaded	Yes	—	4 lb

Boiler Fill Valves Replacement Parts

OS Number	Description	Used With
FM462-RP	Replacement filter assembly for FM450 and FM451 pressure reducing valves	FM450, FM451

Hydronic Heating—Air Vents and Eliminators

Backflow Preventers—Dual Check for Domestic water



Maximum Pressure: 150 psi (1034 kPa)
Maximum Temperature: 180 F (82 C)
Approvals
ASSE: 1024 Certified
Canadian Standards Association: Certified

Product Number	Connection Size	Connection Type	Dimensions, Approximate		Capacity (Cv)		Description
			(inch)	(mm)	(lb)	(kg)	
BP700	3/4 in.	NPT	4 3/8 in. long, 2 1/8 in. wide	111 mm long, 54 mm wide	1.0 lb	0.45 kg	Dual check 3/4 in. NPT
BP701	1 in.	NPT	4 3/8 in. long, 2 1/8 in. wide	111 mm long, 54 mm wide	1.4 lb	0.64 kg	Dual Check 1 in. NPT

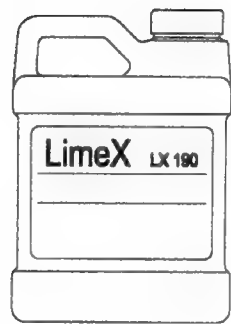
Backflow Preventers—with Intermediate Atmospheric Vent for Heating Systems



Maximum Pressure: 175 psi (1207 kPa)
Maximum Temperature: 250 F (121 C)
Approvals
ASSE: 1024 Certified
Canadian Standards Association: Certified

Product Number	Connection Size	Connection Type	Dimensions, Approximate		Capacity (Cv)		Description
			(inch)	(mm)	(lb)	(kg)	
BP900	1/2 in.	NPT	4 7/8 in. long, 2 1/2 in. wide	124 mm long, 63 mm wide	1.2 lb	0.54 kg	Double check intermediate vacuum breaker
BP901	3/4 in.	NPT	4 7/8 in. long, 2 1/2 in. wide	124 mm long, 63 mm wide	1.2 lb	0.54 kg	Double check intermediate vacuum breaker
BP910	1/2 in.	NPT					Double check intermediate vacuum breaker - 1/2 in. NPT and Boiler Fill Pressure Reducing Valve

Honeywell LimeX—Safe Lime remover for Plumbing and Heating Equipment



LimeX is a non-toxic, non-corrosive, non-flammable, non-injurious solvent used for rapid removal of water lime, scale and rust deposits found in water systems. Frees blocked valves, improves heat transfer, conserves energy and extends the useful life of equipment. Use Honeywell LimeX for all your maintenance jobs to remove lime from piston cylinders, openings and spring assemblies. Dilute to a 50/50 solution with water, immerse valve in solution, flush with water. Valve unblocks within 10-15 minutes.

Description: Safe Lime remover for plumbing and heating equipment.
Liquid Concentrate - 16 oz.
Dilution Ratio: 50%-50% with water
Weight: 1 lb (4.5 kg)
Application Temperature Range: 0 F to 180 F (-18 C to 82 C)

ORDER NUMBER	Description
LX190	Lime Remover

Hydronic Heating—Expansion Tanks

Thermal Expansion Tank for Domestic Hot Water



The Honeywell Thermal Expansion Absorber is a welded, pressurized expansion tank with a butyl diaphragm to control excess pressure in potable hot water systems. The Thermal Expansion Tank controls pressure build-up in the system, eliminates relief valve spillage, protects fixtures and extends water heater life.

- Heavy duty butyl rubber diaphragm (FDA approved) isolates water from air.
- Polypropylene liner, 100% non-metallic, non-corrosive water reservoir.
- Full size range: 2-528 gals., for all water heating volumes (ASME available).
- Prevents water hammer. Maintenance free.
- Protects water heater from harmful pressure cycling.
- Allows storage of expanded water with no increase in system pressures.

Materials: Shell: Steel

Connection: Brass

Liner: Polypropylene

Diaphragm: Butyl

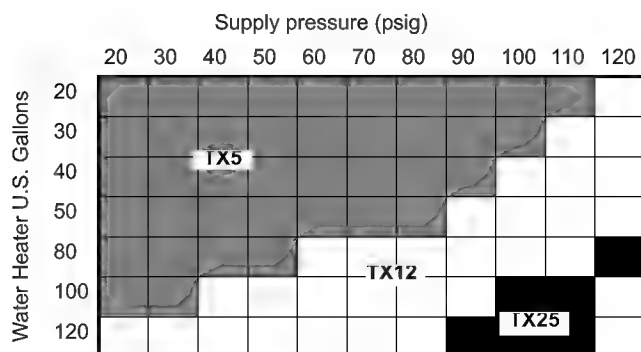
Precharge (psi): 40 psi

Maximum Operating Pressure: 150 psi (1034 kPa)

Maximum Operating Temperature: 200 F (93 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight		Includes
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)	
TX-5	3/4 in.	NPT Male	12 5/8 in.	321 mm	2.0 gal	7.6 L	0.9 gal.	3.41 L	5 lb	2.27 kg	—
TX-12	3/4 in.	NPT Male	12 5/8 in.	321 mm	4.4 gal.	16.7 L	3.2 gal.	12.1 L	5 lb	2.27 kg	—
TX12-1	Backflow Preventer: 3/4 in. Tank: 3/4 in.	NPT Male	12 5/8 in.	321 mm	4.4 gal.	16.7 L	3.2 gal.	12.1 L	5 lb	2.27 kg	BP700 Backflow Preventer
TX-25V	1 in.	NPT Female	19 1/4 in.	489 mm	10.3 gal.	39 L	10.3 gal.	39 L	23 lb	10.43 kg	—
TX-30V	1 in.	NPT Female	23 7/8 in.	606 mm	14.0 gal.	53.1 L	11.3 gal.	42.8 L	25 lb	11.34 kg	—
TX-42V	1 in.	NPT Female	31 5/8 in.	803 mm	20.0 gal.	75.7	11.4 gal.	43.2 L	33 lb	14.97 kg	—
TX-60V	1 1/4 in.	NPT Female	29 5/8 in.	752.5 mm	34.0 gal.	128.7	34.0 gal.	128.7 L	61 lb	27.67 kg	—
TX-80V	1 1/4 in.	NPT Female	36 in.	914 mm	44.0 gal.	166.5 L	33.9 gal.	128.3 L	63 lb	28.58 kg	—
TX-180V	1 1/4 in.	NPT Female	46 3/4 in.	1187.5 mm	62.0 gal.	235 L	34.1 gal.	129.1 L	92 lb	41.73 kg	—
TX-210V	1 1/4 in.	NPT Female	47 1/4 in.	1200 mm	86.0 gal.	325.5 L	46.4 gal.	175.6 L	123 lb	55.79 kg	—

Quick Reference Sizing Chart



Based on

- Heating water from 70 F to 140 F
- Maximum pressure maintained at least 10% below relief valve setting (150 psig).
- Factory pre-charge of 40 psig. No need to change when selected according to chart

Thermal Expansion Tank—ASME Construction for Portable Water



The Honeywell Thermal Expansion Absorber is a welded, pressurized expansion tank with a butyl diaphragm to control excess pressure in potable hot water systems. The Thermal Expansion Tank controls pressure build-up in the system, eliminates relief valve spillage, protects fixtures and extends water heater life.

- Heavy duty butyl rubber diaphragm (FDA approved) isolates water from air.
- Polypropylene liner, 100% non-metallic, non-corrosive water reservoir.
- Full size range: 2-528 gals., for all water heating volumes (ASME available).
- Prevents water hammer. Maintenance free.
- Protects water heater from harmful pressure cycling.
- Allows storage of expanded water with no increase in system pressures.

Materials: Shell: Steel

Diaphragm: Butyl

Connection: Stainless Steel

Liner: Polypropylene

Precharge (psi): 40 psi

Maximum Operating Pressure: 150 psi (1034 kPa)

Maximum Operating Temperature: 200 F (93 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TX-5-C	3/4 in.	NPT Male	10 3/8 in.	263.5 mm	2.0 gal.	7.6 L	0.86 gal.	3.26 L	21 lb	9.53 kg
TX-20V-C	3/4 in.	NPT Male	47 3/4 in.	1213 mm	7.6 gal.	28.8 L	3.2 gal.	12.1 L	258 lb	117 kg
TX-30V-C	3/4 in.	NPT Male	17 1/4 in.	438 mm	12.5 gal.	47.3 L	10.0 gal.	37.9 L	84 lb	38.10 kg
TX-42V-C	3/4 in.	NPT Male	24 1/4 in.	616 mm	17.5 gal.	66.2 L	11.4 gal.	43.2 L	98 lb	44.45 kg
TX-60V-C	3/4 in.	NPT Male	34 in.	864 mm	25.0 gal.	94.6 L	11.3 gal.	42.8 L	125 lb	56.7 kg
TX-80V-C	1 1/4 in.	NPT Female	40 1/2 in.	1029 mm	53.0 gal.	200.6 L	34.5 gal.	130.6 L	190 lb	86.18 kg
TX-120V-C		NPT Female	47 3/4 in.	1213 mm	66 gal.	249.8 L	33 gal.	124.9 L	258 lb	117.1 kg
TX-180V-C	1 1/4 in.	NPT Female	52 5/8 in.	1338 mm	77.0 gal.	291.5 L	33.9 gal.	128.3 L	255 lb	115.67 kg
TX-210V-C	1 1/4 in.	NPT Female	60 in.	1524 mm	88.0 gal.	333.1 L	34.3 gal.	129.8 L	295 lb	133.81 kg
TX-447-C	2 in.	NPT Female	60 in.	1524 mm	53.0 gal.	200.6 L	34.5 gal.	130.6 L	263 lb	119.4 kg
TX-448-C	2 in.	NPT Female	46 in.	1168 mm	80.0 gal.	302.8 L	52 gal.	196.8 L	308 lb	139.8 kg
TX-449-C	2 in.	NPT Female	60 in.	1524 mm	106.0 gal.	401.2 L	69 gal.	261.2 L	353 lb	160.3 kg
TX-450-C	2 in.	NPT Female	74 in.	1880 mm	132.0 gal.	499.6 L	86 gal.	325.5 L	391 lb	177.5 kg
TX-451-C	2 in.	NPT Female	74 1/2 in.	1892 mm	158.0 gal.	598 L	103 gal.	389.86 L	626 lb	283.95 kg
TX-452-C	2 in.	NPT Female	92 1/2 in.	2349.5 mm	211.0 gal.	798.64 L	137 gal.	518.55 L	760 lb	344.74 kg
TX-453-C	3 in.	NPT Female	85 5/8 in.	2175 mm	264.0 gal.	999.24 L	172 gal.	651.02 L	810 lb	367.42 kg
TX-454-C	3 in.	NPT Female	98 in.	2490 mm	317.0 gal.	1199.85 L	206 gal.	779.71 L	914 lb	414.59 kg
TX-455-C	3 in.	NPT Female	110 3/8 in.	2803.5 mm	370.0 gal.	1400.45 L	241 gal.	912.19 L	1018 lb	461.76 kg
TX-456-C	3 in.	NPT Female	81 7/8 in.	2080 mm	422.0 gal.	1597.27 L	275 gal.	1040.88 L	1655 lb	750.71 kg
TX-457-C	3 in.	NPT Female	95 3/4 in.	2432 mm	528.0 gal.	1998.48 L	344 gal.	1302.04 L	1925 lb	873.18 kg

Hydronic Heating—Expansion Tanks

Honeywell TK300 Series Expansion Tank



Honeywell Expansion Tanks are designed to absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time. Use the super efficient Honeywell PowerVent or air vents to remove air and micro-bubbles from the system for maximum performance.

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TK300-15	1/2 in.	NPT Male	12 5/8 in.	321 mm	2.0 gal	7.6 L	1 gal	3.8 L	5 lb	2.3 kg
TK300-30	1/2 in.	NPT Male	15 1/2 in.	394 mm	4.4 gal	16.7 L	2.5 gal	9.5 L	9 lb	4.1 kg
TK300-60	1/2 in.	NPT Male	23 in.	584 mm	7.6 gal.	28.8 L	2.5 gal	9.5 L	14 lb	6.4 kg
TK300-90	1/2 in.	NPT Male	21 in.	533 mm	14.0 gal.	53.1 L	11.5 gal	40.1 L	23 lb	10.4 kg

Expansion Tank for Domestic Hot Water Systems



The Honeywell Thermal Expansion Absorber is a welded, pressurized expansions tank with a butyl diaphragm to control excess pressure in potable hot water systems. The Thermal Expansion Tanks controls pressure build-up in the system, eliminates relief valve spillage, protects fixtures and extends water heater life.

- Heavy Duty butyl rubber diaphragm (FDA Approved) isolates water from air.
- Polypropylene liner, 100% non-metallic, non-corrosive water reservoir.
- Prevents water hammer. Maintenance free.
- Protects water heater from harmful pressure cycling.
- Allows storage of expanded water with controlled increase in systems pressures.

Materials: Shell: Steel

Connection: Bronze

Bladder: Butyl

Precharge (psi): 40 psi

Maximum Operating Pressure: 150 psi (1034 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TX-451	2 in.	NPT Female	74 1/2 in.	1892 mm	158.0 gal.	598.8 L	103 gal.	389.86 L	626 lb	283.95 kg
TX-452	2 in.	NPT Female	92 1/2 in.	2349.5 mm	211.0 gal.	798.64 L	137 gal.	518.55 L	760 lb	344.74 kg
TX-453	3 in.	NPT Female	85 5/8 in.	2175 mm	264.0 gal.	999.24 L	172 gal.	651.02 L	810 lb	367.42 kg
TX-454	3 in.	NPT Female	98 in.	2490 mm	317.0 gal.	1199.85 L	206 gal.	779.71 L	914 lb	414.59 kg
TX-455	3 in.	NPT Female	110 3/8 in.	2803.5 mm	370.0 gal.	1400.45 L	241 gal.	912.19 L	1018 lb	461.76 kg
TX-456	3 in.	NPT Female	81 7/8 in.	2080 mm	422.0 gal.	1597.27 L	275 gal.	1040.88 L	1655 lb	750.71 kg
TX-457	3 in.	NPT Female	95 3/4 in.	2432 mm	528.0 gal.	1998.48 L	344 gal.	1302.04 L	1925 lb	873.18 kg

Honeywell TAX Series Expansion Tank for Commercial Usage

TAX Series (commercial) Expansion Tanks are designed to absorb hot water expansion in closed heating systems. TAX tanks are used in large installations. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped, design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, and loss of BTUs.

- ASME construction: Horizontal TAX Series tanks.

Materials: steel shell, heavy duty butyl diaphragm

Precharge (psi): 12 psi

Maximum Operating Pressure: 125 Psi (862 kPa)

Maximum Operating Temperature: 240 F (115 C)

Comments: ASME Construction

Product Number	Connection Size (in.)	Height		Volume		Maximum Acceptance Volume		Weight	
		(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TAX-15	1/2 in.	19 in.	483 mm	7.8 gal	29.6 L	2.5 gal	9.5 L	46 lb	20.9 kg
TAX-20	1/2 in.	25 3/4 in.	654 mm	10.9 gal	40.2 L	2.5 gal	9.5 L	59 lb	26.8 kg
TAX-40	1/2 in.	29 1/8 in.	740 mm	21.7 gal	82.2 L	11.3 gal	42.8 L	114 lb	52.7 kg
TAX-60	1/2 in.	42 1/2 in.	1079.5 mm	33.6 gal	127.3 L	11.3 gal	42.8 L	139 lb	63.2 kg
TAX-80	1/2 in.	55 1/4 in.	1403 in.	44.4 gal	168.3 L	22.6 gal	85.6 L	196 lb	89.1 kg
TAX-100	1/2 in.	68 1/4 in.	1734 mm	55.7 gal	211 L	22.6 gal	85.6 L	231 lb	105 kg
TAX-120	1 in.	40 1/4 in.	1022 mm	68 gal	257.7 L	34 gal	128.9 L	233 lb	105.9 kg
TAX-144	1 in.	45 1/4 in.	1146 mm	77.0 gal.	291.8 L	34 gal	128.9 L	256 lb	116.4 kg
TAX-180	1 in.	52 1/2 in.	1333.5 mm	90 gal	341.1 L	34 gal	128.9 L	286 lb	130 kg
TAX-200	1 in.	63 in.	1600 mm	110 gal	416.9 L	34 gal	128.9 L	326 lb	148.2 kg
TAX-240	1 in.	49 1/8 in.	1247.8 mm	132.0 gal	500.3 L	46 gal	174.3 L	435 lb	207.3 kg

Honeywell TAXV Series Expansion Tank for Commercial Usage



TAX Series (commercial) Expansion Tanks are designed to absorb hot water expansion in closed heating systems. TAX tanks are used in large installations. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped, design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, and loss of BTUs.

- ASME construction: Vertical TAXV Series tanks.

Materials: steel shell, heavy duty butyl diaphragm

Precharge (psi): 12 psi

Maximum Operating Pressure: 125 Psi (862 kPa)

Maximum Operating Temperature: 240 F (115 C)

Comments: ASME Construction

Product Number	Connection Size (in.)	Height		Volume		Maximum Acceptance Volume		Weight	
		(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TAXV-015	1/2 in.	19 1/4 in.	489 mm	7.8 gal	29.6 L	2.5 gal	9.5 L	48 lb	21.8 kg
TAXV-020	1/2 in.	26 in.	660 mm	10.9 gal	40.2 L	2.5 gal	9.5 L	61 lb	27.7 kg
TAXV-040	1/2 in.	29 1/2 in.	749 mm	21.7 gal	82.2 L	11.3 gal	42.8 L	116 lb	52.7 kg
TAXV-060	1/2 in.	45 1/8 in.	1146 mm	33.6 gal	127.3 L	11.3 gal	42.8 L	145 lb	65.9 kg
TAXV-080	1/2 in.	56 in.	1422 mm	44.4 gal	168.3 L	22.6 gal	85.6 L	70 lb	89.1 kg
TAXV-100	1/2 in.	68 1/4 in.	1734 mm	55.7 gal	211 L	22.6 gal	85.6 L	231 lb	105 kg
TAXV-120	1 in.	44 1/4 in.	1124 mm	68 gal	257.7 L	34 gal	128.9 L	233 lb	105.9 kg
TAXV-144	1 in.	49 1/8 in.	1247.8 mm	77.0 gal.	291.8 L	34 gal	128.9 L	256 lb	116.4 kg
TAXV-180	1 in.	56 1/2 in.	1435 mm	90 gal	341.1 L	34 gal	128.9 L	286 lb	130 kg
TAXV-200	1 in.	63 in.	1600 mm	110 gal	416.9 L	34 gal	128.9 L	326 lb	148.2 kg
TAXV-240	1 in.	49 1/8 in.	1368.4 mm	132.0 gal	500.3 L	46 gal	174.3 L	456 lb	207.3 kg

Hydronic Heating—Expansion Tanks

Honeywell TL Series Expansion Tank for Commercial Usage



Expansion Tanks are designed to absorb hot water expansion in closed heating systems. TL and TAX tanks are used in large installations. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped, design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time. Use the super efficient Honeywell PowerVent or air vents to remove air and micro-bubbles from the system for maximum performance.

- Tank, Air Purger (1. or 1 1/4.), Floatvent, Fill Valve (FV180, F449) for heating systems.

Materials: steel shell, heavy duty butyl diaphragm

Precharge (psi): 12 psi

Maximum Operating Pressure: 125 Psi (862 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Height		Volume		Weight	
		(inch)	(mm)	(gal)	(L)	(lb)	(kg)
TL125-200-L	1 in.	38 3/8 in.	975 mm	53 gal	200.9 L	192 lb	88.6 kg
TL125-300-L	1 in.	52 3/8 in.	1330 mm	80.0 gal.	303.2 L	238 lb	128.6 kg
TL125-400-L	1 in.	66 1/4 in.	1683 mm	106.0 gal	401.7 L	238 lb	128.6 kg
TL125-500-L	1 in.	80 1/4 in.	2038 mm	132.0 gal	500.3 L	328 lb	149 kg
TL125-600-L	1 1/2 in.	65 in.	1651 mm	158 gal	598.8 L	550 lb	250 kg
TL125-800-L	1 1/2 in.	83 in.	2108 mm	211 gal	799.7 L	680 lb	309 kg
TL125-1000-L	1 1/2 in.	74 in.	1880 mm	264 gal	1000.6 L	760 lb	345.4 kg
TL125-1200-L	1 1/2 in.	88 1/4 in.	2241.5 mm	317 gal	1201.4 L	864 lb	392.7 kg
TL125-1400-L	1 1/2 in.	100 5/8 in.	2556 mm	370 gal	1402.3 L	968 lb	440 kg
TL125-1600-L	1 1/2 in.	71 in.	1803 mm	422 gal	1561.4 L	1580 lb	718.2 kg
TL125-2000-L	1 1/2 in.	85 in.	2159 mm	528 gal	2001.1 L	1810 lb	822.7 kg
TL175-200-L	1 in.	38 3/8 in.	975 mm	53 gal	200.9 L	283 lb	128.6 kg
TL175-300-L	1 in.	52 3/8 in.	1330 mm	80.0 gal.	303.2 L	358 lb	162.7 kg
TL175-400-L	1 in.	66 1/4 in.	1683 mm	106.0 gal	401.7 L	435 lb	197.7 kg
TL175-500-L	1 in.	80 1/4 in.	2038 mm	132.0 gal	500.3 L	510 lb	231.8 kg
TL175-600-L	1 1/2 in.	65 in.	1651 mm	158 gal	598.8 L	611 lb	277.7 kg
TL175-800-L	1 1/2 in.	83 in.	2108 mm	211 gal	799.7 L	729 lb	331.4 kg
TL175-1000-L	1 1/2 in.	74 in.	1880 mm	264 gal	1000.6 L	910 lb	413.6 kg
TL175-1200-L	1 1/2 in.	88 1/4 in.	2241.5 mm	317 gal	1201.4 L	1033 lb	469.5 kg
TL175-1400-L	1 1/2 in.	100 5/8 in.	2556 mm	370 gal	1402.3 L	1169 lb	531.4 kg
TL175-1600-L	1 1/2 in.	71 in.	1803 mm	422 gal	1561.4 L	2094 lb	951.2 kg
TL175-2000-L	1 1/2 in.	85 in.	2159 mm	528 gal	2001.1 L	2386 lb	1084.5 kg
TL250-200-L	1 in.	38 3/8 in.	975 mm	53 gal	200.9 L	379 lb	189.5 kg
TL250-300-L	1 in.	52 3/8 in.	1330 mm	80.0 gal.	303.2 L	494 lb	224.5 kg
TL250-400-L	1 in.	66 1/4 in.	1683 mm	106.0 gal	401.7 L	607 lb	275.9 kg
TL250-500-L	1 in.	80 1/4 in.	2038 mm	132.0 gal	500.3 L	720 lb	327.3 kg
TL250-600-L	1 1/2 in.	65 in.	1651 mm	158 gal	598.8 L	85.1 lb	386.8 kg
TL250-1000-L	1 1/2 in.	74 in.	1880 mm	264 gal	1000.6 L	1419 lb	645 kg
TL250-1200-L	1 1/2 in.	88 1/4 in.	2241.5 mm	317 gal	1201.4 L	1613 lb	733.2 kg
TL250-1400-L	1 1/2 in.	100 5/8 in.	2556 mm	370 gal	1402.3 L	1808 lb	821.8 kg
TL250-1600-L	1 1/2 in.	71 in.	1803 mm	422 gal	1561.4 L	2311 lb	1050.5 kg
TL250-2000-L	1 1/2 in.	85 in.	2159 mm	528 gal	2001.1 L	2677 lb	1216.8 kg

Honeywell XPS Series Expansion Tank for Commercial Usage



XPS Series (commercial) Expansion Tanks are designed to absorb hot water expansion in closed heating systems in larger installations. They are equipped with butyl diaphragms to separate clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valves spills, loss BTUs for improved system performance.

- For ASME construction consult factory.

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
XPS-030V	1 in.	NPT Female	23 7/8 in.	606 mm	14.0 gal.	53.1 L	11.3 gal	42.8 L	25 lb	11.4 kg
XPS-040V	1 in.	NPT Female	31 5/8 in.	803 mm	20.0 gal.	75.8 L	11.3 gal	42.8 L	33 lb	15 kg
XPS-060V	1 in.	NPT Female	46 1/2 in.	584 mm	32 gal	121.3 L	11.3 gal	42.8 L	43 lb	19.5 kg
XPS-090V	1 1/4 in.	NPT Female	36 in.	914 mm	44 gal	166.8 L	34 gal	128.9 L	69 lb	31.4 kg
XPS-110V	1 1/4 in.	NPT Female	46 3/4 in.	876.3 mm	62 gal	235 L	34 gal	128.9 L	92 lb	41.8 kg
XPS-160V	1 1/4 in.	NPT Female	47 1/4 in.	1200 mm	86.0 gal.	325.9 L	46 gal	174.3 L	123 lb	55.9 kg

Hydronic Heating—Combo Expansion Tank Kits

Honeywell Expansion Tank and Backflow Preventer Combo



The Honeywell Thermal Expansion Absorber is a welded, pressurized expansion tank with a butyl diaphragm to control excess pressure in potable hot water systems. The Thermal Expansion Tank controls pressure build-up in the system, eliminates relief valve spillage, protects fixtures and extends water heater life.

- Heavy duty butyl rubber diaphragm (FDA approved) isolates water from air.
- Polypropylene liner, 100% non-metallic, non-corrosive water reservoir.
- Prevents water hammer. Maintenance free.
- Protects water heater from harmful pressure cycling.
- Allows storage of expanded water with no increase in system pressures.
- Prevents backflow when supply pressure falls below system pressure.

Product Number	Connection Size	Connection Type	Includes
TX-5-1	Tank Size - 3/4 in.; Backflow Preventer 3/4 in.	NPT	Expansion Tank and BP700 Backflow Preventer
TX-5-2	Tank Size - 3/4 in.; Backflow Preventer 1 in.	NPT	Expansion Tank and BP700 Backflow Preventer
TX12-1	Tank Size - 3/4 in.; Backflow Preventer 3/4 in.	NPT	Expansion Tank and BP700 Backflow Preventer
TX12-2	Tank Size - 3/4 in.; Backflow Preventer 1 in.	NPT	Expansion Tank and BP700 Backflow Preventer

Honeywell Combo Kit Expansion Tank Kit with Air Purger



Expansion Tanks are designed to absorb hot water expansion in closed heating systems. TL and TAX tanks are used in large installations. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time. Use the air purger, Honeywell PowerVent and air vents to remove air and micro-bubbles from the system for maximum performance.

- Tank, Air Purger, Floatvent (FV180).
- Individually packaged for heating systems.

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TK300-15A-1	Tank 1/2 in. Purger 1 in.	NPT Male	20 in.	508 mm	2.0 gal	3.8 L	1 gal	3.8 L	9 lb	4.1 kg
TK300-15A-2	Tank: 1/2 in. Purger:1 1/4 in.	NPT Male	20 in.	508 mm	2.0 gal	3.8 L	1 gal	3.8 L	9 lb	4.1 kg
TK300-30A-1	Tank: 1/2 in. Purger:1 in.	NPT Male	24 in.	609 mm	4.4 gal	9.5 L	2.5 gal	9.5 L	13 lb	5.9 kg
TK300-30A-2	Tank: 1/2 in. Purger:1 1/4 in.	NPT Male	24 in.	609 mm	4.4 gal	9.5 L	2.5 gal	9.5 L	13 lb	5.9 kg
TK300-60A-1	Tank: 1/2 in. Purger:1 in.	NPT Male	32 in.	813 mm	7.6 gal.	9.5 L	2.5 gal	9.5 L	32 lb	14.5 kg
TK300-60A-2	Tank: 1/2 in. Purger: 1 1/4 in.	NPT Male	24 in.	609 mm	7.6 gal.	9.5 L	2.5 gal	9.5 L	32 lb	14.5 kg

Hydronic Heating—Combo Expansion Tank Kits

Honeywell Combo Expansion Tank Kit with Fill Valve



Honeywell Expansion Tanks are designed to absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time.

- Tank, Fill Valve (F499) for heating systems.

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TK300-15FV	Valve: 1/2 in. Tank: 1/2 in.	NPT Male	12 5/8 in.	321 mm	2.0 gal	7.6 L	1 gal	3.8 L	5 lb	2.3 kg
TK300-30FV	Valve: 1/2 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm	4.4 gal	16.7 L	2.5 gal	9.5 L	9 lb	4.1 kg
TK300-60FV	Valve: 1/2 in. Tank: 1/2 in.	NPT Male	23 in.	584 mm	7.6 gal.	28.8 L	2.5 gal	9.5 L	14 lb	6.4 kg
TK300-90FV	Valve: 1/2 in. Tank: 1/2 in.	NPT Male	21 in.	533 mm	14.0 gal.	53.1 L	11.5 gal	40.1 L	23 lb	10.4 kg

Honeywell Combo Expansion Tank Kit with Air Purger and Fill Valve



Expansion Tanks are designed to absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time. Use the air purger and air vents to remove air and micro-bubbles from the system for maximum performance.

- Tank, Air Purger (1. or 1 1/4.), Floatvent, Fill Valve (FV180, F449) for heating systems.

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Maximum Acceptance Volume		Weight	
			(inch)	(mm)	(gal)	(L)	(gal)	(L)	(lb)	(kg)
TK300-15AFV-1	Tank: 1/2 in. Purger: 1 in.	NPT Male	24 in.	609 mm	2.0 gal	7.6 L	1 gal	3.8 L	11 lb	5 kg
TK300-15AFV-2	Tank: 1/2 in. Purger: 1 1/4 in.	NPT Male	24 in.	609 mm	2.0 gal	7.6 L	1 gal	3.8 L	11 lb	5 kg
TK300-30AFV-1	Tank: 1/2 in. Purger: 1 in.	NPT Male	28 in.	711 mm	4.4 gal	16.7 L	2.5 gal	9.5 L	15 lb	6.8 kg
TK300-30AFV-2	Tank: 1/2 in. Purger: 1 1/4 in.	NPT Male	28 in.	711 mm	4.4 gal	16.7 L	2.5 gal	9.5 L	15 lb	6.8 kg
TK300-60AFV-1	Tank: 1/2 in. Purger: 1 in.	NPT Male	36 in.	914 mm	7.6 gal.	28.8 L	2.5 gal	9.5 L	24 lb	10.9 kg
TK300-60AFV-2	Tank: 1/2 in. Purger: 1 1/4 in.	NPT Male	36 in.	914 mm	7.6 gal.	28.8 L	2.5 gal	9.5 L	24 lb	10.9 kg

Hydronic Heating—Combo Expansion Tank Kits

Honeywell Combo Expansion Tank Kit with SuperVent™



Expansion Tanks are designed to absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped design. Pre-pressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTUs and reduce circulator running time. Use the super efficient Honeywell SuperVent or air vents to remove air and micro-bubbles from the system for maximum performance.

- Welded diaphragm tank, SuperVent, air and micro-bubble eliminator.
- Sweat SuperVent add "S".

Precharge (psi): 12 psi

Maximum Operating Pressure: 100 Psi (689 kPa)

Maximum Operating Temperature: 240 F (115 C)

Product Number	Connection Size (in.)	Connection Type	Height		Volume		Weight		Includes
			(inch)	(mm)	(gal)	(L)	(lb)	(kg)	
TK15PV075	PowerVent: 3/4 in. Tank: 1/2 in.	NPT Male	12 5/8 in.	190 mm			7 lb	31.4 kg	PV075
TK30PV100	PowerVent: 1 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm			11.7 lb	5.31	PV100
TK30PV100FM	PowerVent: 1 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm	5 gal.	18.93 L	13.7 lb		PV100, FM911
TK30PV100S	PowerVent: 1 in. Tank: 1/2 in.	SuperVent: Sweat Tank: NPT Male	15 1/2 in.	394 mm	5 gal.	18.93 L			PV100
TK30PV100SFM	PowerVent: 1 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm	5 gal.	18.93 L			PV100, STK300-30, FM911
TK30PV125	PowerVent: 1 1/4 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm			12.5 lb	5.68	PV125
TK30PV125FM	PowerVent: 1 1/4 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm	5 gal.	18.93 L	14.5 lb		PV125, FM911
TK30PV125SFM	PowerVent: 1 1/4 in. Tank: 1/2 in.	NPT Male	15 1/2 in.	394 mm	5 gal.	18.93 L			PV125, STK300-30, FM911
TK60PV125	PowerVent: 1 1/4 in. Tank: 1/2 in.	NPT	23 in.	584 mm			17.5 lb	7.95	PV125
TK60PV150	PowerVent: 1 1/2 in. Tank: 1/2 in.	NPT	23 in.	584 mm			19.0 lb	12.71	PV150
TK90PV150	PowerVent: 1 1/2 in. Tank: 1/2 in.	NPT	21 in.	533 mm			28.0 lb	12.71	PV150

Supreme Boiler Package



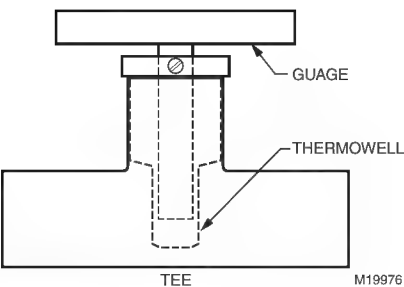
Supreme Boiler Packages are designed to absorb hot water expansion in closed heating systems. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are a welded, not clamped, design. Prepressurized at 12 psi, the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist water logging, loss of pressure through relief valve spills, and loss of Btu's. SuperVent air eliminators remove air and micro-bubbles from the system for maximum performance. FM911 Boiler Feed Valve, provides boiler fill pressure regulating valve 12 psi preset with backflow preventer protection. SparcoZone2™ is a multiple zone valve/controller that is pre-assembled, pre wired and ready to connect. A complete package for boiler hook-up.

Product Number	Connection Size	Number of Zones	Description
SBP4S3100FM	1 in.	4	Package contains SparcoZone2™, Expansion Tank, SuperVent, Boiler Feed Valve
SBP4S3125FM	1 1/4 in.	4	Package contains SparcoZone2™, Expansion Tank, SuperVent, Boiler Feed Valve

* Contact factory to add Honeywell thermostats.

Hydronic Heating—Thermometers and Gauges

Thermometers with Thermowells



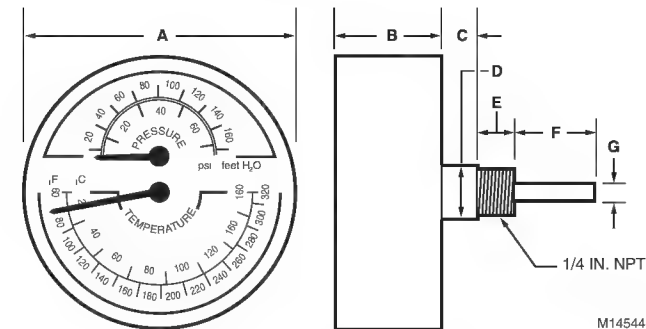
Materials: Case: steel; Well: brass
Length: 1/2 sweat x 2 in. long
Temperature Range: 32 F to 250 F (0 C to 121 C)
Comments: Brass thermowell is included to allow the thermometer to be removed without draining the system.

Product Number	Dial Size		Connection Size	Connection Type	Weight	
	(inch)	(mm)			(lb)	(kg)
GS200	2 in.	51 mm	1/2 in.	Sweat	0.21 lb	0.095 kg
GS250	2 1/2 in.	63.5 mm	1/2 in.	Sweat	0.25 lb	0.114 kg
GT161	2 in.	51 mm	1/2 in.	Threaded	0.21 lb	0.095 kg
GT162	2 1/2 in.	63.5 mm	1/2 in.	Threaded	0.25 lb	0.114 kg

Tridicators



Pressure/temperature gauge with relief set point indicator for boilers and shut off valve.

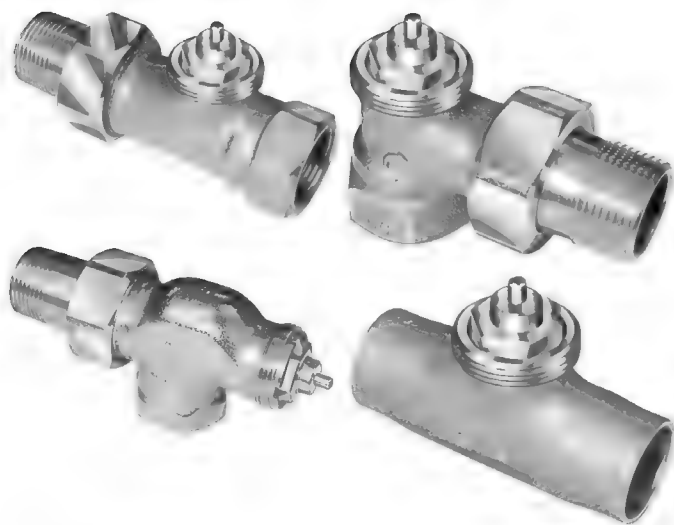


Dial Size: 3 1/8 in. (A)
Maximum Pressure: 75 PSI
Temperature Range: 60 F - 320 F (15 C to 160 C)
Connection Size: 1/4 in.
Connection Type: NPT

Product Number	Probe Length (F)		Weight		Comments
	(inch)	(mm)	(lb)	(kg)	
TDV-040	29/32 in	23.02 mm	0.4 lb	0.18 kg	Pressure/temperature gauge with relief set point indicator and shut off valve
TD-090	29/32 in	23.02 mm	0.3 lb	0.14 kg	Pressure/temperature gauge with relief set point indicator
TD-165	1 21/32 in.	42.06 mm	0.3 lb	0.14 kg	Pressure/temperature gauge with relief set point indicator

Hydronic Heating—Thermostatic Radiator Valves

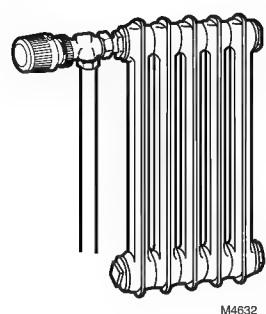
V100D-G Standard Capacity Thermostatic Radiator Valves



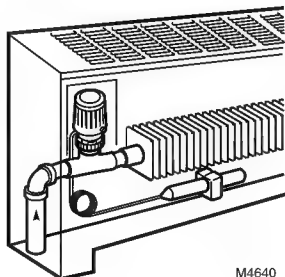
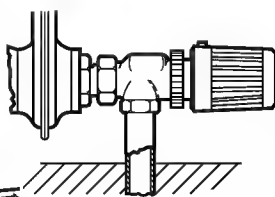
Allow automatic temperature control in two-pipe steam or hot water systems for free standing radiators, convectors, and other heating units with standard capacity requirements. Provide comfort and energy savings at affordable prices.

- Continually monitors and adjusts room temperature for consistent comfort and relief from underheating and overheating.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated brass casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1016) while valve remains in service, in-line, under pressure.
- Valve normally open without control mounted.
- Valves may also be used with MV100 Electric Zone Valve Actuator.

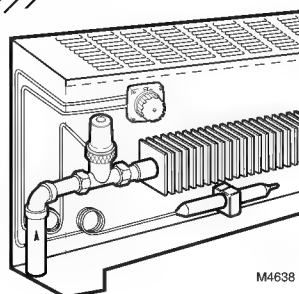
Typical installations



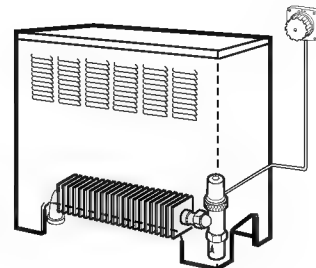
M4632



M4640



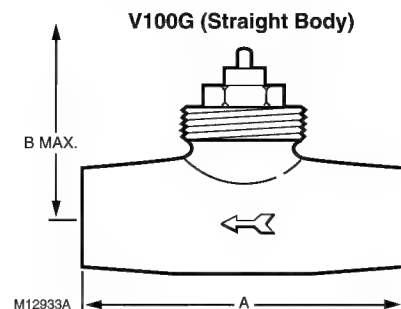
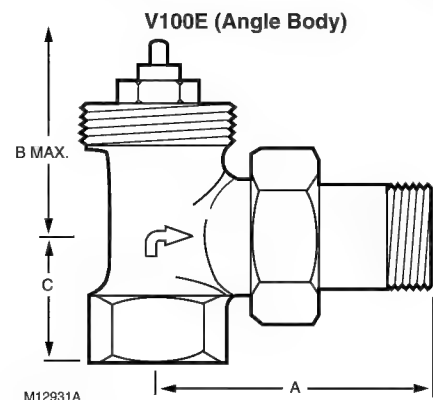
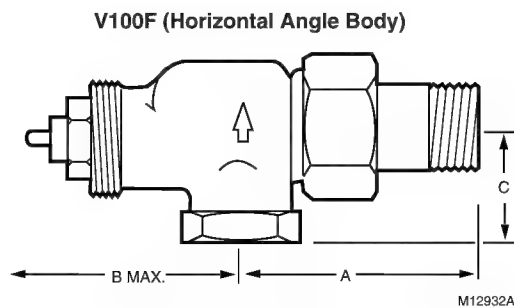
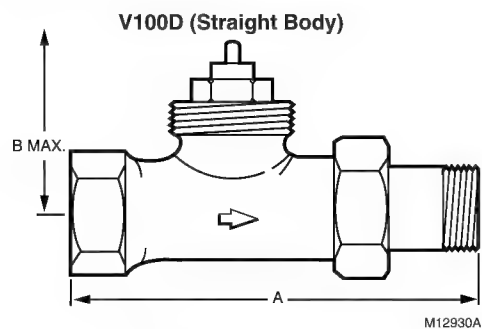
M4638



M3190

Hydronic Heating—Thermostatic Radiator Valves

Dimension Diagrams



Valve	Pipe Size	A inch (mm)	B inch (mm)	C inch (mm)
V100D	1/2	3-3/4 (95)	4-1/16 (104)	—
	3/4	4-3/16 (106)	4-1/16 (104)	—
	1	4-1/2 (114)	4-1/2 (114)	—
V100E	1/2	2-5/16 (58)	3-13/16 (98)	1 (26)
	3/4	2-5/8 (66)	3-13/16 (98)	1-1/8 (29)
	1	2-15/16 (74)	4-5/16 (110)	1-5/16 (34)
V100F	1/2	2-1/8 (54)	4-1/2 (115)	1-1/8 (28)
	3/4	2-1/2 (64)	5-3/16 (132)	1-3/16 (31)
	1	2-15/16 (74)	5-3/16 (132)	1-7/16 (37)
V100G	1/2	2-5/8 (66)	4-1/16 (104)	—
	3/4	2-15/16 (74)	4-1/16 (104)	—

Body Materials: Nickel Plated Bronze

Cartridge Change Tool: Yes - Use MT110C1016

Maximum Temperature Ratings: 248 F (120 C)

Differential Pressure Ratings: For low noise: 3 psi

(For low noise: 20 kPa);

With MV100: 36 psi (With MV100: 248 kPa);

With T100 or T200: 15 psi (With T100 or T200: 103 kPa)

Maximum Pressure Ratings for steam: 15 psi (103 kPa)

Maximum Pressure Ratings for hot water: 150 psi (1034 kPa)

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity			Used With
					Capacity	Cv	Btu/hr-steam	
V100D1056	Especially suited for base boards and straight runs where manual valves were not originally installed.	straight	Threaded	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	—
V100D1064	Especially suited for base boards and straight runs where manual valves were not originally installed.	straight	Threaded	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	—
V100D1072	Especially suited for base boards and straight runs where manual valves were not originally installed.	straight	Threaded	1 in.	Standard	2.7 Cv	70,500 Btu/hr	—
V100D5057	Especially suited for base boards and straight runs where manual valves were not originally installed.	straight	Sweat	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	—
V100D5065	Especially suited for base boards and straight runs where manual valves were not originally installed.	straight	Sweat	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	—

Hydronic Heating—Thermostatic Radiator Valves

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity			Used With
					Capacity	Cv	Btu/hr-steam	
V100E1055	Use where installation space is limited	angle	Threaded	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	T100B, T100C, T100F
V100E1063	Use where installation space is limited	angle	Threaded	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	T100B, T100C, T100F
V100E1071	Use where installation space is limited	angle	Threaded	1 in.	Standard	2.7 Cv	70,500 Btu/hr	T100B, T100C, T100F
V100E5056	Use where installation space is limited	angle	Sweat	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	T100B, T100C, T100F
V100E5064	Use where installation space is limited	angle	Sweat	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	T100B, T100C, T100F
V100F1054	Replaces most manual valves with minimum piping changes.	horizontal angle	Threaded	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	T100A, M and V controls to conform to horizontal mounting requirements
V100F1062	Replaces most manual valves with minimum piping changes.	horizontal angle	Threaded	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	T100A, M and V controls to conform to horizontal mounting requirements
V100F1070	Replaces most manual valves with minimum piping changes.	horizontal angle	Threaded	1 in.	Standard	2.7 Cv	70,500 Btu/hr	T100A, M and V controls to conform to horizontal mounting requirements
V100F5055	Replaces most manual valves with minimum piping changes.	horizontal angle	Sweat	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	T100A, M and V controls to conform to horizontal mounting requirements
V100F5063	Replaces most manual valves with minimum piping changes.	horizontal angle	Sweat	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	T100A, M and V controls to conform to horizontal mounting requirements
V100G5054	For baseboards and other installations with copper tubing.	straight	Sweat both ends, no union	1/2 in.	Standard	2.5 Cv	59,100 Btu/hr	T100
V100G5062	For baseboards and other installations with copper tubing.	straight	Sweat both ends, no union	3/4 in.	Standard	2.7 Cv	63,800 Btu/hr	T100

Hydronic Heating—Thermostatic Radiator Valves

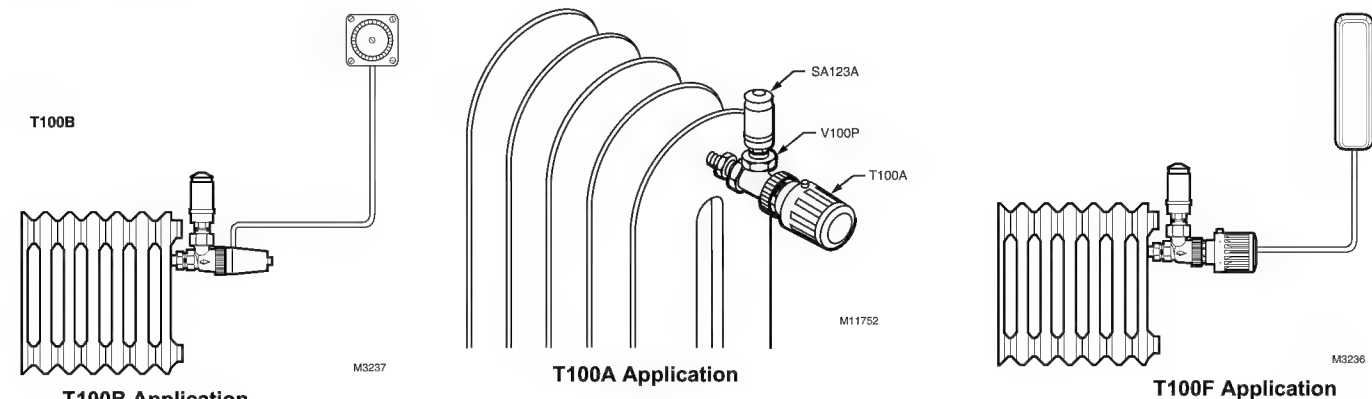
V100P/Y100P One-pipe Steam Thermostatic Radiator Valves



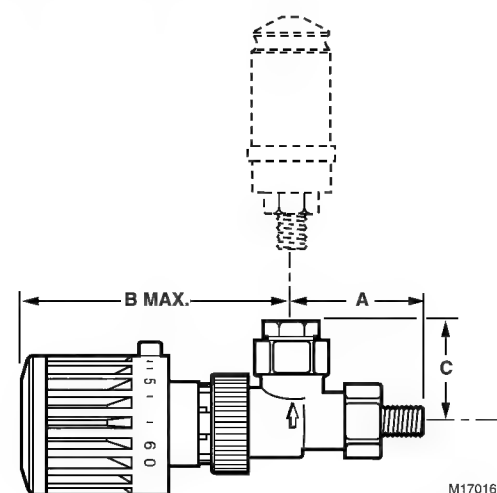
Allow automatic temperature control in two-pipe steam or hot water systems for free standing radiators, convectors, and other heating units with standard capacity requirements. Provide comfort and energy savings at affordable prices.

- Continually monitors and adjusts room temperature for consistent comfort and relief from underheating and overheating.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated brass casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1016) while valve remains in service, in-line, under pressure.
- Valve normally open without control mounted.
- Valves may also be used with MV100 Electric Zone Valve Actuator.

Typical installations



Dimension Diagram



Valve	Pipe Size	A inch (mm)	B inch (mm)	C inch (mm)
V100P	3/8	1-11/16 (43)	3-13/16 (98)	1-3/16 (31)

Body Materials: Nickel Plated Bronze

Cartridge Change Tool: Yes - Use MT110C1016

Maximum Temperature Ratings: 248 F (120 C)

Differential Pressure Ratings: For low noise: 3 psi

(For low noise: 20 kPa);

With MV100: 36 psi (With MV100: 248 kPa);

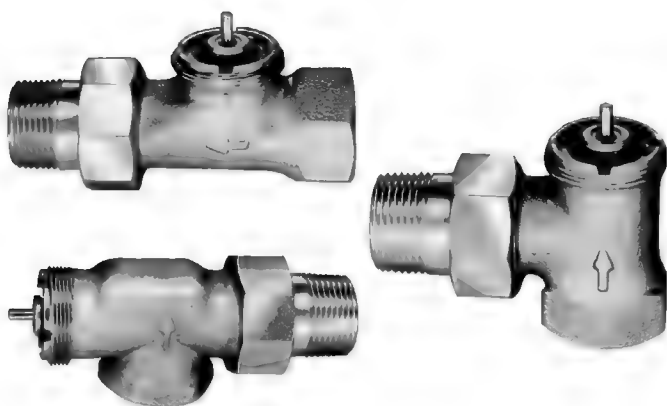
With T100 or T200: 15 psi (With T100 or T200: 103 kPa)

Maximum Pressure Ratings for steam: 15 psi (103 kPa)

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity	Includes	Used With
V100P1046	Angle pattern valve body for one pipe steam systems	angle	Threaded	1/8 in.	Standard	—	T100
Y100P1001	Thermostatic Radiator Valve Pack. Includes V100P1046 body with SA123 steam/air vent. Use for one pipe steam applications.	angle	NPT Threaded	1/8 in.	Standard	V100P1046 and SA143 steam air vent	—
SA123A1002	Steam Air Vent	—	—	—	—	—	V100P

Hydronic Heating—Thermostatic Radiator Valves

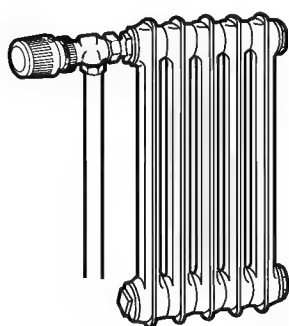
V110 High Capacity Thermostatic Radiator Valves



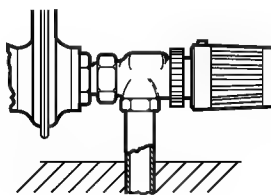
Provide precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through free-standing radiators, convectors and other heating units with high capacity requirements.

- Continually monitors and adjusts room temperature for consistent comfort and relief from underheating and overheating.
- Designed with the higher capacity normally required by U.S.A. heating systems.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated bronze casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1011) while valve remains in service, in-line, under pressure.
- Valve normally open without control mounted.
- Valves may also be used with MV110 Electric Zone Valve Actuator.
- Meet ASHRAE Standard 102-1989.

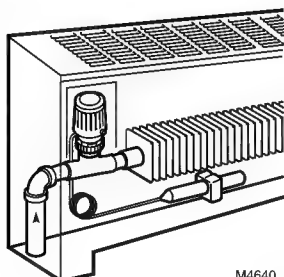
Typical Installations



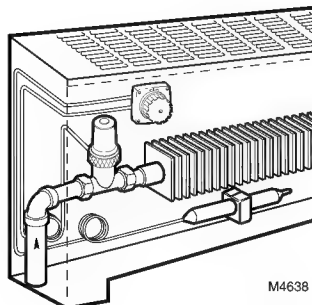
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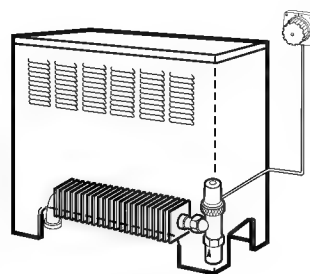
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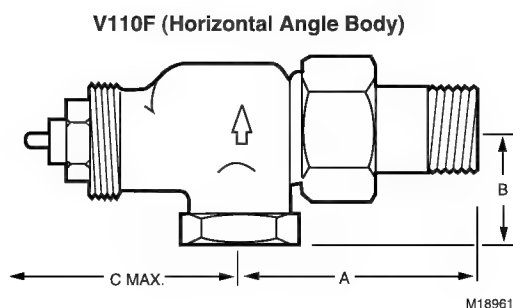
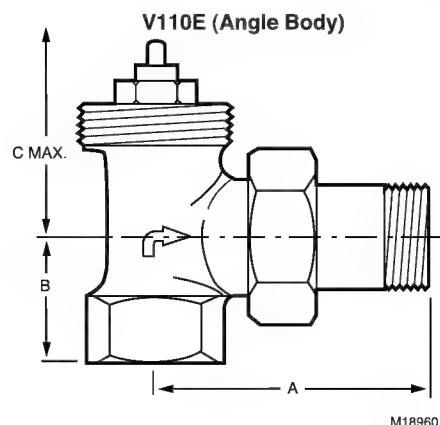
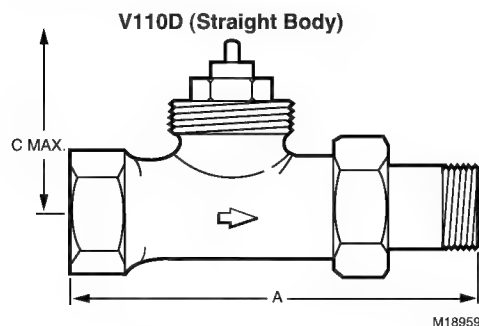
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M3190

Hydronic Heating—Thermostatic Radiator Valves

Dimension Diagrams



Valve	Pipe Size	A inch (mm)	B inch (mm)	C inch (mm)
V110D	1/2	3-3/4 (95)	—	4 3/4 (121)
	3/4	4-1/8 (105)	—	4 3/4 (121)
	1	4-15/16 (114)	—	4 3/4 (121)
	1 1/4	5-7/8 (147)	—	5 (127)
V110E	1/2	2-9/16 (65)	1(25)	4 3/4 (121)
	3/4	2-5/8 (66)	1-1/8 (29)	4 3/4 (121)
	1	3 (76)	1-5/16 (34)	4 3/4 (121)
	1 1/4	3-5/8 (92)	1-11/16 (43)	5 (127)
V100F	1/2	2-1/4 (57)	1(26)	5-1/8 (128)
	3/4	2-9/16 (65)	1-1/8 (28)	5-1/4 (133)
	1	2-15/16 (74)	1-3/16 (31)	5-1/4 (133)
	1 1/4	3-1/2 (89)	2-3/16 (56)	5-1/4 (133)

Body Materials: Nickel Plated Bronze

Cartridge Change Tool: Yes - Use MT110C1011

Maximum Temperature Ratings: 248 F (120 C)

Maximum Pressure Ratings for steam: 15 psi (103 kPa)

Maximum Pressure Ratings for hot water: 150 psi (1034 kPa)

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity			Used With
					Capacity	Cv	Btu/hr-steam	
V110D1000	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Threaded	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110D1008	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Threaded	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104
V110D1016	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Threaded	1 in.	high	7.0 Cv	193,000 Btu/hr	T104
V110D1024	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Threaded	1 1/4 in.	high	8.0 Cv	193,000 Btu/hr	T104
V110D5001	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Sweat	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110D5009	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Sweat	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104
V110D5017	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units.	straight	Sweat	1 in.	high	7.0 Cv	193,000 Btu/hr	T104

Hydronic Heating—Thermostatic Radiator Valves

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity			Used With
					Capacity	Cv	Btu/hr-steam	
V110E1004	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Threaded	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110E1012	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Threaded	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104
V110E1020	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Threaded	1 in.	high	7.0 Cv	193,000 Btu/hr	T104
V110E1028	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Threaded	1 1/4 in.	high	8.0 Cv	193,000 Btu/hr	T104
V110E5005	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Sweat	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110E5013	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	angle	Sweat	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104
V110F1002	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Threaded	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110F1010	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Threaded	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104
V110F1018	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Threaded	1 in.	high	7.0 Cv	193,000 Btu/hr	T104
V110F1026	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Threaded	1 1/4 in.	high	8.0 Cv	193,000 Btu/hr	T104
V110F5003	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Sweat	1/2 in.	high	4.6 Cv	127,000 Btu/hr	T104
V110F5011	Precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through high capacity heating units	horizontal angle	Sweat	3/4 in.	high	5.8 Cv	162,000 Btu/hr	T104

Hydronic Heating—Thermostatic Radiator Valves

V135 Thermostatic Mixing or Diverting Valves



For use in hydronic heating systems as a three-way mixing or diverting valve; controls loop temperature in radiant heating systems.

- V135 includes plastic handle for manual operation.
- Knurled ring on T100R control head for easy attachment to V135.

Body Materials: Bronze

Maximum Differential Pressure Ratings: 17 psi (117 kPa)

Maximum Pressure Ratings for steam: 232 psi (1601 kPa)

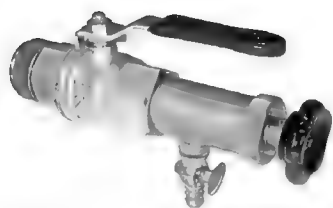
Maximum Temperature Ratings: 248 F (120 C)

Product Number	Application Type	Body Style	Pipe Connections	Pipe Size	Capacity	Dimensions, Approximate		Used With
					Cv	(inch)	(mm)	
V135A1006	Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.	three-way	Sweat	3/4 in.	3.7 Cv	2 9/16 in., 5 1/8 in.	64 mm, 128 mm	T100R
V135A1014	Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.	three-way	Sweat	1 in.	5.8 Cv	2 15/16 in., 5 13/16 in.	74 mm, 148 mm	T100R
V135A1022	Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.	three-way	NPT Threaded	1 1/4 in.	5.8 Cv	3 1/4 in., 6 3/8 in.	82 mm, 162 mm	T100R
V135A1048	Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.	three-way	NPT Threaded	1 1/2 in.	11.7 Cv	3 3/4 in., 7 3/8 in.	94 mm, 199 mm	T100R
V135A1063	Thermostatic mixing/diverting valve for use in hydronic heating systems. Controls loop temperature in radiant heating systems.	three-way	Sweat	1 1/4 in.	5.8 Cv	3 3/8 in., 6 3/8 in.	86 mm, 162 mm	T100R

Thermostatic Valve Accessories

OS Number	Description	Used With
2400300	Union nut for 1 in. valve body	V100 Series
2607900	Union nut for 1/2 in. valve body	V100 Series
2609400	Union nut for 3/4 in. valve body	V100 Series
2610900	1/2 in. external NPT tail piece	V100 Series
2611000	3/4 in. external NPT tail piece	V100 Series
2611100	1 in. external NPT tail piece	V100 Series
3007506	1/2 in. internal sweat tail piece	V100 Series
3007507	3/4 in. internal sweat tail piece	V100 Series
3007508	1 in. internal sweat tail piece	V100 Series V100 Series old style only
A108B1003	Protective cap and manual set point controller	V100 Series old style only V100/V108 old style only
CA100A1016	Replacement cartridge for old style V100 (plastic cartridge body)	V100/V108 old style only V100 Series old style only
CA100B1008	Replacement cartridge for new style V100 (metal cartridge body)	V100 Series old style only V100 Series new style
2400100	Union Nut	

MT100; MT110 Cartridge Changing Tool



The MT100 and MT110 Valve Cartridge Changing Tool enables the user to remove, and clean or replace the valve cartridge while the valve remains pressurized. Boiler shutdown is not required.

- MT100 for V100 Series valves.
- MT110 for V110 Series valves.

WARNING

Severe Scalding Hazard.
Contact with hot liquid can cause severe injury or death.
Use extreme caution when working with hot liquid.

CAUTION

Hazardous Splashing Fluids.
Can injure, burn, or blind.
Wear eye protection to prevent injury.

To remove the cartridge, perform the following:

1. Remove controller and loosen valve cartridge slightly using a 19 mm socket wrench (A,B) with V100 valves. See Fig. 1. With V110 valves, use the MT110D1019.
2. Tighten Cartridge Changer to valve body (A,B), close drain cock (C), and turn tool handle counter clockwise to unscrew cartridge (D). See Fig. 2.
3. Pull handle out to clear cartridge changer ball valve (A), close ball valve (B), and open drain cock to remove excess water and steam from chamber (C). See Fig. 3.
4. Unscrew end cap (A) and remove cartridge from chamber (B). See Fig. 4.
5. Clean or replace cartridge.

NOTE: Torque new style V100 (all metal) cartridges to 25 ft-lb. Fully seat and slightly tighten old style V100 and V110 cartridges.

Fig. 1. Loosening valve cartridge.

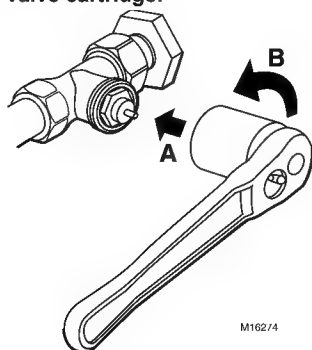


Fig. 2. Attaching Cartridge Changing Tool to valve.

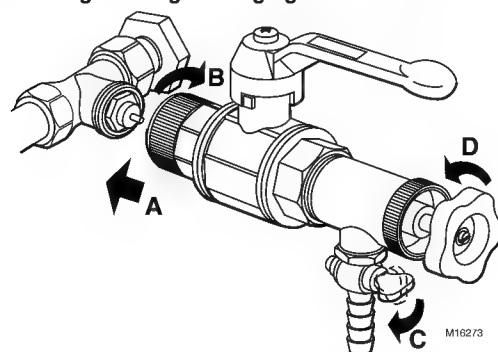


Fig. 3. Disconnecting valve cartridge and draining chamber.

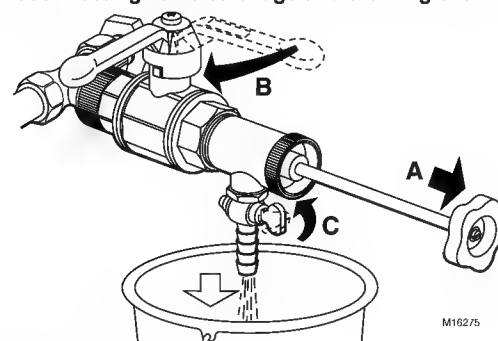
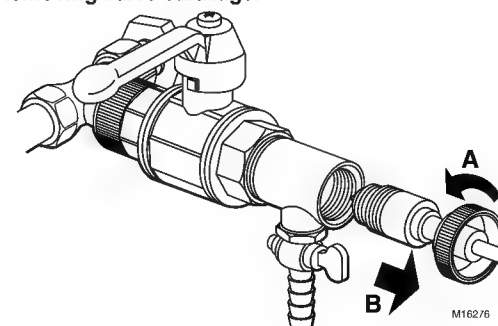


Fig. 4. Removing valve cartridge.



To reinstall cartridge into the valve, use the same process and figures. Perform steps in reverse order. All figure arrows are backwards (except Fig. 1, arrow A). Proceed as follows:

1. Replace cartridge into chamber (B) and screw end cap onto cartridge changer (A). See Fig. 4.
2. Close drain cock (C), open ball valve (B), and push handle in (A). See Fig. 3.
3. Turn tool handle clockwise to screw in cartridge (D), open drain cock to drain chamber of remaining water and steam (C), and loosen cartridge changer from valve body (B,A). See Fig. 2.
4. Tighten valve cartridge using a 19 mm socket wrench (A,B) and replace controller. See Fig. 1. With V110 valves, use the MT110D1019.

Product Number	Application Type	For Valve	Collar Diameter		Comments
			(inch)	(mm)	
MT100C1016	Cartridge changing tool, in service, in line, under pressure for V100 series valve.	V100	1 3/16 in.	30 mm	—
MT100L1023	Tool to remove T100M tamper resistant direct mount control from valve body.	V100	—	—	—
MT110C1011	Cartridge changing tool, in service, in line, under pressure for V110 series valve.	V110	1 19/32 in.	40 mm	—
MT110D1019	Socket to remove or replace cartridges on V110D, E, F series valves; use in combination with MT110C1011 for pre-loosening and final tightening of cartridge. Fits 3/8 in. socket driver.	V110	1 19/32 in.	40 mm	For CA110C Cartridge

Hydronic Heating—Thermostatic Radiator Valve Actuators

MV100; MV110 Electric Zone Valve Actuators



24V heat motor actuators used to operate V100 and V110 valves in hot water and steam heating systems.

- Provide efficient zone control for hot water or two-pipe steam heating systems when used with low voltage thermostats, such as T810, T822 or Honeywell Chronotherm® III thermostats.
- Additional system components may include AT140 Transformer, and MZ110 or MZ410 Elapsed Time Meter.
- Built-in, normally open end switch may be used to operate additional components, such as circulator pump or burner relays.
- Compact size for ease of installation.
- Smooth response of heat motor prevents water hammer, providing silent operation and reliability.
- Heater element has reduced power consumption, eliminating the need for continuous on-off cycling of the heat motor during operation.
- MV100 can be used with V135 Valves for two-position control.

For Valve: V100

Product Number	Application Type	Temperature Range		Comments
		(F)	(C)	
MV100S8011	24 V Heat Motor actuator for Hot water and steam heating systems	122 F max. ambient	50 C max. ambient	Can be used with V135 for two-position Control
MV110S8005	24 V Heat Motor actuator for Hot water and steam heating systems	122 F max. ambient	50 C max. ambient	Can be used with V135 for two-position Control

T100;T200 Standard Capacity Thermostatic Radiator Actuators



Allow automatic temperature control in two-pipe steam or hot water systems for free standing radiators, convectors, and other heating units with standard capacity requirements. Provide comfort and energy savings at affordable prices.

- Continually monitor and adjust room temperature for consistent comfort and relief from underheating and overheating.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated brass casted body with working parts in cartridge insert for ease of service.
- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.

- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1016) while valve remains in service, in-line, under pressure.
- Valve normally open without control mounted.
- Valves may also be used with MV100 Electric Zone Valve Actuator.

For Valve: V100
Collar Diameter: 1 3/16 in. (30 mm)

Accessories:
0950008 Capillary clip and pins for T100F and T104F Thermostatic Valve

Hydronic Heating—Thermostatic Radiator Valve Actuators

Product Number	Application Type	Capillary Length	Sensor (Integral or Remote)	Setpoint (Integral or Remote)	Temperature Range		Comments
					(F)	(C)	
T100A1028	A self-contained control with sensor, setpoint dial and valve actuator in one unit. Mounts horizontal. Not for use inside enclosures or where airflow around sensor is restricted. Adjustable limits. For V100 valves.	—	Integral	Integral	43 F to 79 F	6 C to 26 C	Adjustable Limits
T100B1035	A control with combined remote setpoint and sensor mounted on wall. Connected by a capillary tube to an actuator, which is mounted on the valve body. For V100 valves.	6 1/2 ft (2 m) or 16 ft (5 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T100B1043	A control with combined remote setpoint and sensor mounted on wall. Connected by a capillary tube to an actuator, which is mounted on the valve body. For V100 valves.	6 1/2 ft (2 m) or 16 ft (5 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T100C1026	A control with remote setpoint and sensor mounted with setpoint dial on outside of heating cabinet; sensor mounted beneath heating coils in cold air return. Dual capillary. For V100 valves.	Two 4 1/2 ft (1.4 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T100F1395	Thermostatic radiator valve controller for use with V100 series valves. With remote temperature sensing and integral set point. Adjustable limits.	6 ft 8 in. (2 m)	Integral	Integral	43 F to 79 F	6 C to 26 C	Adjustable Limits
T100M2056	A self-contained control with sensor, setpoint dial and actuator in one unit. Use where increased durability, tamper resistance and limited adjustment range are desired. Horizontal mount. Locks onto valve body. Not for enclosures. For V100 valves.	—	Integral	Integral	43 F to 79 F	6 C to 26 C	Tamper Resistant, Adjustable Limits
T200A1000	Chromed end with white body. Self-contained control with sensor, setpoint dial, and valve actuator in one unit. Mounts horizontal. Not for use inside enclosures or in locations with restricted airflow around sensor. For V100 valves.	—	Integral	Integral	43 F to 79 F	6 C to 26 C	Designer Look

T100R Thermostatic Mixing or Diverting Valve Actuator



For use in hydronic heating systems as a three-way mixing or diverting valve; controls loop temperature in radiant heating systems.

- T100R Thermostatic Actuator includes strap-on-pipe sensor.
- Knurled ring on T100R control head for easy attachment to V135.

For Valve: V135

Collar Diameter: 1 3/16 in. (30 mm)

Product Number	Application Type	Capillary Length	Sensor (Integral or Remote)	Setpoint (Integral or Remote)	Temperature Range	
					(F)	(C)
T100R1004	Thermostatic Radiator Controller for use with V135 valve body for diverting or mixing applications. Includes remote sensor for hydronic heating systems requiring remote sensing.	6 ft 8 in. (2 m)	Remote	Remote	50 F to 122 F	10 C to 50 C
T100R1012	Thermostatic Radiator Controller for use with V135 valve body for diverting or mixing applications. Includes remote sensor for hydronic heating systems requiring remote sensing.	6 ft 8 in. (2 m)	Remote	Remote	86 F to 158 F	30 C to 70 C

Hydronic Heating—Thermostatic Radiator Valve Actuators

T104 High Capacity Thermostatic Radiator Valves



Provide precise and automatic control of room temperature in two-pipe systems by modulating the flow of hot water or steam through free-standing radiators, convectors and other heating units with high capacity requirements.

- Continually monitor and adjust room temperature for consistent comfort and relief from underheating and overheating.
- Designed with the higher capacity normally required by U.S.A. heating systems.
- Valve seat disc, which is made of resilient material (EPDM), ensures tight shutoff on steam or hot water systems.
- Nickel-plated bronze casted body with working parts in cartridge insert for ease of service.

- Controls include sensor, setpoint dial and valve actuator; components may be integral or connected by capillary tubes.
- Require no electrical connections.
- All working parts are replaceable using service tool (MT100C1011) while valve remains in service, in-line, under pressure.
- Valve normally open without control mounted.
- Valves may also be used with MV110 Electric Zone Valve Actuator.
- Meet ASHRAE Standard 102-1989.

For Valve: V110

Collar Diameter: 1 19/32 in.; 40 mm

Product Number	Application Type	Capillary Length	Sensor (Integral or Remote)	Setpoint (Integral or Remote)	Temperature Range		Comments
					(F)	(C)	
T104A1040	Self-contained controller with sensor, setpoint dial and valve actuator in one unit. Adjustable limits. Mount horizontal. Not for use inside enclosures or in locations with restricted airflow around sensor.	—	Integral	Integral	43 F to 79 F	6 C to 26 C	Adjustable Limits
T104B1038	Controller with combined remote setpoint and sensor mounted on a wall. Setpoint/sensor connect with a capillary tube to an actuator, which mounts on the valve body. For V110 valves.	6 ft. 8 in. (2 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T104B1046	Controller with combined remote setpoint and sensor mounted on a wall. Setpoint/sensor connect with a capillary tube to an actuator, which mounts on the valve body. For V110 valves.	16 ft.	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T104C1036	Controller with remote setpoint and sensor normally mounted with setpoint dial mounted on outside cabinet or enclosure; sensor mounted beneath heating coils in cold air return. Double capillaries.	Two 4 1/2 ft (1.4 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	—
T104C1052	Controller with remote setpoint and sensor normally mounted with setpoint dial mounted on outside cabinet or enclosure; sensor mounted beneath heating coils in cold air return, below the heat source.	Two 4 1/2 ft (1.4 m)	Remote	Remote	48 F to 79 F	9 C to 26 C	With Special Scale.
T104F1512	Thermostatic radiator valve controller for use with V110 series valves. With remote temperature sensing and integral set point. Adjustable limits.	6 ft. 8 in. (2 m)	Remote	Integral	48 F to 79 F	9 C to 26 C	Adjustable Limits
T104V1422	Self-contained controller with sensor, setpoint dial and valve actuator in one unit. Locks to valve body. Rugged design. Adjustable setpoint under locking cap. Factory set at 68 F (20 C). Mounts horizontally.	6 ft. 8 in. (2 m)	Integral	Integral	48 F to 79 F	9 C to 26 C	Vandal Proof

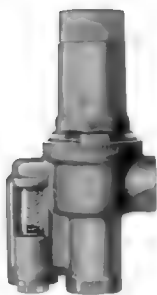
Hydronic Heating—Thermostatic Radiator Valve Actuators

Thermostatic Valve Actuator—Accessories

OS Number	Description
0950008	Capillary clip and pins for T100F and T104F Thermostatic Valve
202814	Locking cap for T100V and T104V thermostatic radiator valve controllers.
203225	Bulb guard kit for T100F and T104F TRV's. Consists of cover, bracket, 2 screws, and 2 anchors.
2535900	Mount clips nails
272873	MT100F driver upgrade kit. For use with old and new V100.

Hydronic Heating—Pressure Regulators

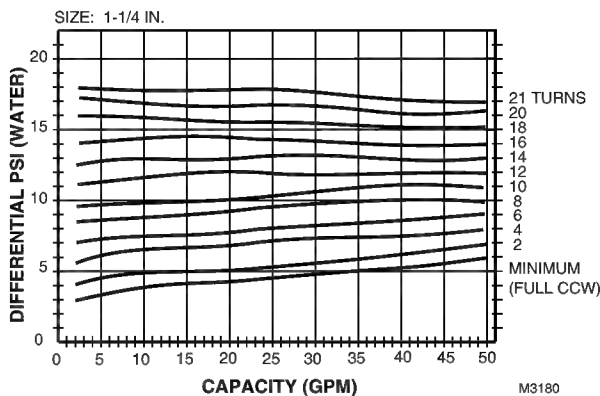
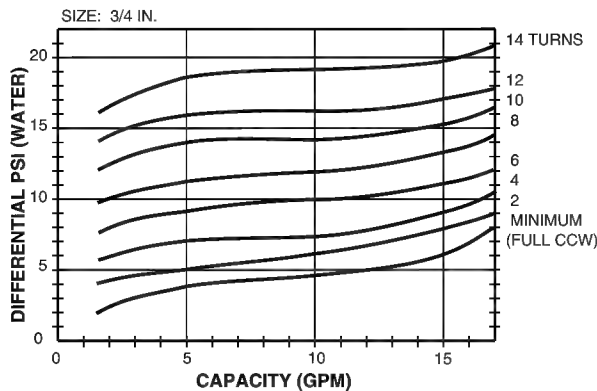
D146 Differential Pressure Regulators



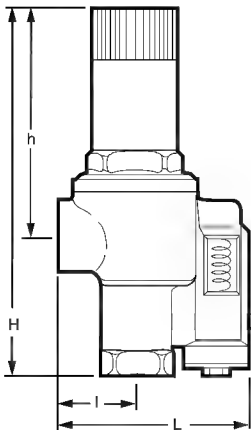
Used to eliminate excessive pump head pressure when most radiator valves are closed due to reduced demand.

- Install between supply and return sides of a hydronic system to stabilize pressure differential and reduce the effects of demand changes.
- Control maintains a constant differential between the two sides by opening a bypass whenever the difference between supply and return reaches the setpoint.
- Provides silent, trouble-free service.
- Easy installation; requires no electrical hookup.
- Easy adjustment of pressure by turning regulating cap.
- Built-in differential pressure indicator.
- Brass valve body with thermoplastic and stainless steel parts.
- Diaphragm of EPDM.

D146 Capacities



Dimension Diagrams



SIZE (INCHES)	3/4	1-1/4
H	6-1/4 (160)	8-1/2 (213)
h	4 (100)	6 (155)
L	3-3/8 (86)	4-1/4 (109)
I	1-1/2 (36)	2 (51)

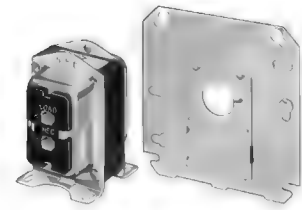
M3181

Maximum Temperature Rating: 230 F (110 C)
Pressure Rating - Working: 85 psi system maximum.
Pressure Rating - Regulating: 0 to 17 psi differential.

Product Number	Valve size	Capacities ^a	
		Btu/hr (approximate)	gpm
D146M1032	3/4 in.	180,000	18
D146M1040	1 1/4 in.	500,000	50

^a Based on 20 F (11 C) normal temperature drop across the radiator)

AT140 General Purpose Transformers



Provides power to 24 Vac circuits in heating control systems. Intended for use in systems with predictable, uniform loads. Can use in any application that does not exceed listed ratings.

- Meets NEC Class 2 requirements.
- Conforms to Underwriters Laboratories Inc. Standard UL 1585 and are identified "Class 2 not wet, Class 3 wet."

Approvals:
Underwriters Laboratories Inc: Listed.

Product Number	Electrical Ratings			Primary, Connections	Secondary, Connections	Mounting
	Primary Voltage	Secondary Voltage	Output (100 percent power factor)			
AT140A1034	120V at 60 Hz	27V (open circuit)	40 VA	9 in. (230 mm) leadwires	Screw terminals	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted.

MZ110; MZ410 Elapsed Time Meters

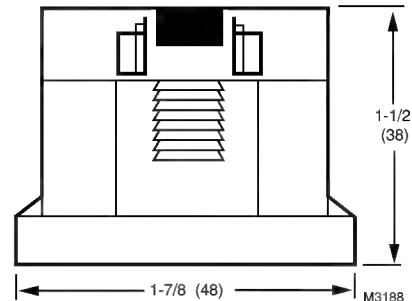
Dimensions in inches (mm).



Used for registering elapsed time in hours and tenths of hours.

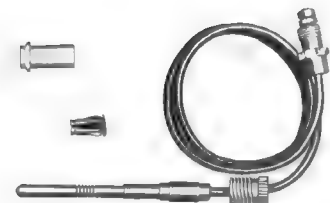
- Allow monitoring of electrically operated pumps, fans, burners, valves, etc.
- Register to 99,999.9 hours.
- Include bracket for panel mounting.

Mounting: Fit in 1-13/16 in. square, 1-1/4 in. deep hole



Product Number	Description	Power Supply	Current Draw
MZ110B1001	24 Vac Elapsed Time Meter.	24 Vac, 60 Hz	6.9 mA
MZ410B1003	120 Vac Elapsed Time Meter.	120 Vac, 60 Hz	8.6 mA

Q390 Thermocouples



For use on gas-fired heating systems.

- Bottom-lock design provides easy installation in most applications.
- Average operating life of four years.

- Universal adapter saves service time by assuring correct positioning of the thermocouple relative to the flame.
- Available in a variety of lead lengths—18 to 36 in. (457 to 914 mm).
- Externally threaded nut connector for Pilotstat safety control power units.
- Shipped as a ten pack bag assembly that includes a box of ten unit packs individually wrapped with a push-in clip and universal adapter.

Electrical Ratings:

Resistance: 0.2 ohms maximum dc cold resistance at 80 F (27 C).

Temperature Ratings:

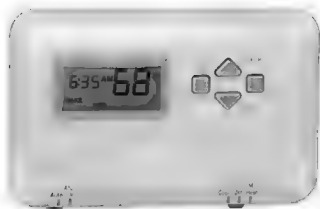
Hot Junction: 1400 F (760 C).

Cold Junction: 780 F (416 C).

Product Number	Approximate Length		Includes
	in.	mm	
Q390A5203	18	457	A box of ten thermocouples individually packed with a push-in clip and a universal adapter; 30 millivolt output.
Q390A5211	24	610	A box of ten thermocouples individually packed with a push-in clip and a universal adapter; 30 millivolt output.
Q390A5229	30	762	A box of ten thermocouples individually packed with a push-in clip and a universal adapter; 30 millivolt output.
Q390A5237	36	914	A box of ten thermocouples individually packed with a push-in clip and a universal adapter; 30 millivolt output.

Hydronic Heating—Accessories

T8002 Programmable Thermostats



Provides 24 Vac control of heating and cooling systems, including heat pump and multistage systems, with manual changeover from heat to cool.

- Attractive styling complements any decor.
- Pre-programmed for your convenience.
- Program up to four time periods and temperature setpoints.

Dimensions, Approximate: 3 1/2 in. high, 5 1/2 in. wide, 1 3/16 in. deep (89 mm high, 140 mm wide, 55 mm deep)

Ambient Temperature Range: 30 F to 110 F (-1 C to +43 C)

Setting Temperature Range: 40 F to 99 F (4.5 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 18 to 30 Vac, 24 Vac nominal.

Frequency: 60 Hz

Programmability: 5-2 Day Program

Changeover: Manual

- Programs and setpoints are permanently held in memory in the event of a power failure.
- Indefinite setpoint temperature hold for added comfort and energy savings.
- Ease-of-use means fewer homeowner questions and increased homeowner satisfaction.
- Large temperature display for quick easy readability.
- Has backlit display.
- Conveniently sized thermostat (5-1/2 x 3-1/2) with optional decorator cover plates (7-3/8 x 5-3/4) make it easy to install in a variety of locations.
- Keys are located by the display for easy access.
- FAN and SYSTEM switches are located on the lower edge to eliminate accidental setting changes.
- Easy installation, setup and system checkout saves time and increases installer productivity.
- Degree F or C temperature display for added model flexibility.
- Cooling cycle rate is fixed (3 cph), the standard setting for compressors.

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 0.02A to 1.5A running, 3.5A inrush

Currents, Cooling: 0.02A to 1.5A running, 7.5A inrush

Currents, Fan: 0.02A to 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Accessories:

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

	Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages
					System	Fan			
*	T8002C1000	Gas, oil and electric heating with cooling, including 1 heat, 1 cool heat pumps	Premier White®	Horizontal	HEAT-OFF-COOL	AUTO-ON	Battery	R,RC,G,W,Y,O,B	1 Heat/ 1 Cool
* TRADELINE models • SUPER TRADELINE models									

T8602 Chronotherm® IV Plus Programmable Thermostats



Provide electronic control of 24 Vac single-stage or multistage heating and cooling systems, including heat pump systems.

- Large display with bright back lighting makes the LCD very easy to read.
- Full seven-day program capability; different schedules and temperature setpoints selectable every day to match homeowner's flexible schedule.
- Copy key makes programming easier and faster for installer and homeowner.
- Daylight Savings Time (DST) key for quick change in and out of Daylight Savings Time.
- Easy temporary temperature setpoint changes for current period, vacation hold (1 to 255 days) or indefinite hold adds to homeowner comfort and energy savings.

Dimensions, Approximate: 3 3/4 in. high, 6 1/16 in. long x 1 9/16 in. deep (95.3 mm high, 154 mm long, 39.7 mm deep)

Ambient Temperature Range: 40 F to 110 F (4 C to 43 C)

Setting Temperature Range: Heat: 40 F to 90 F; Cool: 45 F to 99 F ((Heat) 4.5 C to 32 C (Cool) 7 C to 37 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 20 to 30 Vac

Frequency: 60 Hz

Programmability: 7 Day Program

Changeover: Automatic/Manual Selectable

Humidity Ratings: 5 to 90% RH, non-condensing

Currents, Heating: 1.5A running, 3.5A inrush

- Frequently used keys are located near liquid crystal display (LCD) for quick and easy access to information.
- Attractive styling complements any decor to homeowner's delight.
- Configurable features allow one model to be used to replace many different models (less inventory, no longer need to carry separate models to get these features).
 - F or C temperature display;
 - Automatic or manual changeover;
 - Electric or conventional heat fan operation;
 - Adjustable heating cycle rate.
- Minimum-off time for cooling compressors and heat pumps protects equipment and extends equipment life.
- Easy installation, setup and system test saves installer time and increases productivity.
- System test simplifies troubleshooting and saves time by overriding time delays.
- Adaptive Intelligent Recovery™ control brings room temperature to temperature setpoint at the programmed time, maximizing comfort and energy savings.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages for increased installer and homeowner convenience.
- Powerstealing, hardwired and battery powered models available for virtually all equipment and application needs.
- Universal Versaguard™ Thermostat guards available for added security.
- Adjustable temperature range stops.

Currents, Cooling: 1.5A running, 7.5A inrush

Currents, Fan: 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Accessories:

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

C7089B1000 C7089 Outdoor Sensor

Replacement Parts:

207396B Replacement Door for Chronotherm IV, Premier White

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Stages	Sensors Available	
				System	Fan				Outdoor	
• T8602D2018	Electric (Conventional), Oil, Gas	Premier White®	Horizontal	HEAT-OFF-COOL-AUTO	AUTO-ON	Battery	W,G,R,Rc,Y,O,B,OT,OT	1 Heat/1 Cool	Yes, optional	
* TRADELINE models • SUPER TRADELINE models										

Hydronic Heating—Accessories

T822 Thermostats



Provide 24 Vac control of heating or cooling systems. Use with MV100/MV110.

- NEW STYLE LOOK. Vented cover for improved temperature sensing.
- Vented cover for improved temperature sensing.
- Coiled bimetal element operates mercury switch.
- Setting lever and thermometer scale on thermostat face.
- Straight-in wiring capability.
- Mounts directly on the wall or on vertical outlet box.

Dimensions, Approximate: 4 3/4 in. high, 2 7/8 in. wide, 1 3/8 in. deep (121 mm high, 73 mm wide, 35 mm deep)

Electrical Ratings: 20 to 30 Vac

Mounting: Vertical Mounting

Sensor Element: Bimetal

Switching Action: SPST

Switch Type: Mercury

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

209649A Taupe Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

193120B Taupe Mounting Plate Accessory

Product Number	Application	Color	Terminal Designations	Stages	Setting Temperature Range		Anticipator (heating)
					(F)	(C)	
T822D2121	Heating only control in low voltage systems	Taupe	R, W	1 Heat	55 F to 95 F	13 C to 35 C	0.18 to 1.0A Adj.

T8400 Electronic Thermostats



Electronic Thermostats provide temperature control for 24V heating-cooling systems, including multistage heat pump systems and multistage conventional systems, with manual changeover from heat to cool.

Dimensions, Approximate: Horizontal models: 3 1/2 in. high, 5 1/2 in. wide, 1 3/16 in. deep (89 mm high, 140 mm wide, 55 mm deep); Square models: 3 1/2 in. high, 3 1/2 in. wide, 1 3/16 in. deep (89 mm high, 89 mm wide, 55 mm deep)

Setting Temperature Range: 40 F to 99 F (4.5 C to 37 C)

Operating Temperature Range: 30 F to 110 F (-1 C to +43.3 C)

Interstage Differential Temperature: 1 F to 1.5 F (.5 C to .8 C)

Multistage models only

Electrical Ratings: 18 to 30 Vac

Frequency: 50/60 Hz

Humidity Ratings: 5 to 90% RH, non-condensing

Accuracy: 1 F (0.5 C)

Heating Current: 1st stage 0.02 to 1.5A running; 3.5A inrush

- Attractive styling complements any decor.
- Ease-of-use means fewer questions and increased satisfaction.
- Large display for quick, easy readability.
- Keys are located by the display for easy access.
- Fan and system switches are located on the lower edge to eliminate accidental setting changes.
- Easy installation, setup and self-test saves installer time.
- Manual changeover from heat to cool eliminates unexpected system operation.
- T8400 for 1 stage heat, 1 stage cool.
- Degree F or C temperature display for added model flexibility.
- Selectable heating cycle rate for a variety of applications.
- Cooling cycle rate is fixed (3 cph), the standard setting for compressors, for speedy installation.
- Setpoints are permanently held in memory (no batteries used) and retained during power outages.

Cooling Current: 1st stage 0.02 to 1.5A running; 7.5A inrush
2nd stage 1.0A Max

Fan Current: 0.02A to 0.5A running, 2.5A inrush

Sensor Element: Thermistor

Cycles per Hour: Adj. 1,3,4,5,6,9,12 depending on model

Includes: 4074FAB resistor and logo insert pocket

Accessories:

209632 Cover Plate Mounting Bracket for T8400, T8401 square models

209634B Premier White Decorator Cover Plate, 3 7/8 in. (98 mm) x 3 7/8 in. (98 mm)

209650A Premier White Universal cover plate, 7 3/8 in. (187 mm) x 5 3/4 in. (146 mm) including screws and adapter plate

Product Number	Application	Color	Mounting	Switch Position		Power Method	Terminal Designations	Switch Type	Stages
				System	Fan				
* T8400B1018	Heat only gas or oil systems	Premier White®	Square	OFF-HEAT	—	Power-Stealing	R, W	Electronic	1 Heat
* T8400C1024	Single stage gas and oil heating and cooling systems	Premier White®	Square	OFF-HEAT-COOL	AUTO-ON	Power-Stealing	R, W, Y, G	Electronic	1 Heat/1 Cool
* TRADELINE models • SUPER TRADELINE models									

T8775A,C The Digital Round™ Non-Programmable Thermostats



The T8775A Thermostat provides 24V control of heating only systems. The T8775C Thermostat provides single-stage temperature control for 24V heating-cooling systems with manual changeover from heat to cool.

Dimensions, Approximate: 3 11/16 in. diameter, 1 7/16 in. deep (94 mm diameter, 37 mm deep)

Operating Temperature Range: 40 F to 110 F (4.5 C to 43.3 C)

Differential Temperature: 1 F (0.5 C)

Electrical Ratings: 18 to 30 Vac

Frequency: 60 Hz

Changeover: Manual

Humidity Ratings: 5 to 90% RH, non-condensing

Heating Current: .02 to 1.5A running, 3.5 A inrush

Cooling Current: 0.02 to 1.5A running; 6.0A inrush

- Attractive styling complements any decor.
- Large easy-to-read display. The temperature reading is easily seen from a distance.
- Backlit display. On-demand backlighting makes it easy to read the display in a dark room or hallway.
- No batteries required. The temperature setting is held permanently in memory in the event of a power failure.
- Powered through heating-cooling system controls.
- System and Fan switches on the T8775C model.
- Manual changeover from heat to cool on T8775C model.
- Easy installation, set up and 5-minute compressor bypass saves time and increases installer productivity.
- Easily configurable by the use of DIP switches.
- F or C temperature display.
- Selectable heating cycle rates (1, 3, 6, 9 cph) for a variety of applications.
- Cooling cycle rate is fixed at 3 cph. This is the standard compressor setting for quick installations.
- Minimum off-time for compressors in the cooling mode. Protects and extends the life of the equipment.
- Decorative cover plate is available to cover marks on the wall or to mount the T8775 Thermostat onto an electrical box.

Fan Current: .02 to 0.5A run; 2.5A inrush

Mounting: Front wired

Switch Type: Electronic

Sensor Element: Thermistor

Cycles per Hour: Adj. 1,3,6,9

Accessories:

50000066-001 Premier White® Decorative Cover Plate for T8775

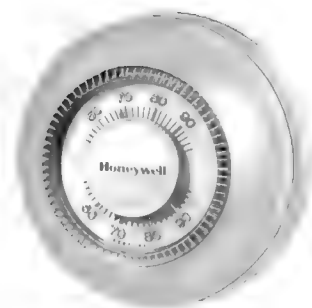
Replacement Parts:

32007680-001 Premier White® Replacement Cover for T8775

	Product Number	Application	Color	Power Method	Terminal Designations	Stages	Setting Temperature Range		Comments	Includes
							(F)	(C)		
*	T8775A1009	24 Vac gas or oil heat only systems	Premier White®	Powered through heating system controls	R, W	1 Heat	40 F to 90 F in heating	4.5 C to 32 C in heating	Large easy-to-see backlit display.	Wallplate, 4074FAB resistor, mounting screws and wall anchors.
* TRADELINE models • SUPER TRADELINE models										

Hydronic Heating—Accessories

T87F Thermostat-The Round®



Provides temperature control for 24 to 27 Vac residential heating, cooling or heating-cooling systems.

- Adjustable heat anticipator for comfortable temperature control.
- Use Q539 Subbase in heating and cooling systems requiring system and fan switching at the thermostat location.
- Temperature scale in Fahrenheit on thermostat.
- Separate temperature setting and thermometer scale on thermostat face.
- Knurled dial provides easy set point adjustment.

Dimensions, Approximate: 3-1/4 in. diameter, 1-1/2 in. deep (without Wallplate or Subbase; 3-11/16 in. diameter, 1-3/4 in. deep with Wallplate or Subbase)

(83 mm diameter, 38 mm deep without Wallplate or Subbase; 94 mm diameter, 45 mm deep with Wallplate or Subbase)

Electrical Ratings: Heating: 1.5A running, 3.5A inrush at 30 Vac maximum; Cooling: 1.5A running, 7.5A inrush at 30Vac maximum

Changeover: Manual

Accuracy: 1 F (0.5 C)

Mounting: round

Sensor Element: Bimetal

Switch Type: Mercury

Approvals:

Canadian Standards Association: Certified; File No. LR95329-1

Accessories:

199933 Cover Ring for Taupe T87 models.

32005439-001 Taupe Adapter Kit

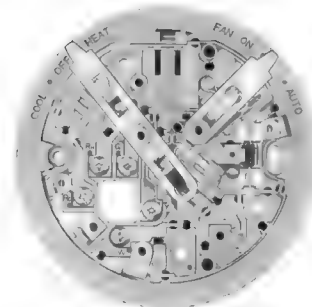
TG587F1008 Thermostat Guard for T87/Q539 with see-through face

TG587F1016 Thermostat Guard for T87/Q539 with opaque window

Product Number	Application	Color	Terminal Designations	Switching Action	Setting Temperature Range		Anticipator (heating)	Anticipator (cooling)	Comments	Includes
					(F)	(C)				
* T87F2873	Single stage heat and cool systems	Taupe	R, W	SPST	40 F to 90 F	4 C to 32 C	0.1 to 1.2A.	0 to 1.5A, 24 to 27 Vac	Concealed 2-terminal heating only wallplate.	104456B Wallplate

* TRADELINE models • SUPER TRADELINE models

Q539 Thermostat Subbases



Provide system and fan switching, and mounting for T87F Thermostats.

- Include cooling anticipator and letter-coded screw terminals for electrical connections.
- Mount directly on wall or on an outlet box using optional 6 in. (152 mm) cover ring or adapter plate assembly.

Dimensions, Approximate: 3 11/16 in. diameter, 1 3/4 in. deep (94 mm diameter, 45 mm deep)

Electrical Ratings: 2A at 24 Vac

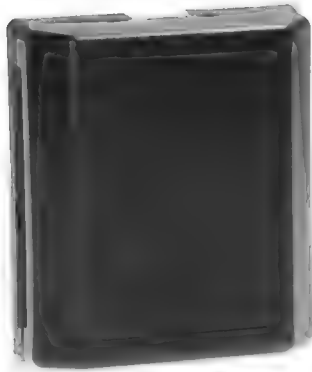
Accessories:

32005439-001 Taupe Adapter Kit

Product Number	Color	Switch Position		Terminal Designations	Comments
		System	Fan		
* Q539A1147	Taupe	COOL-OFF-HEAT	ON-AUTO	Rc,W,Y,G,Rh	Independent heat-cool circuits for conventional systems.

* TRADELINE models • SUPER TRADELINE models

QS7100F Flame Quality Monitor



The QS7100F Flame Quality Monitor (FQM) is designed to be used with any of the Honeywell Electronic Oil Primary Controls, such as the R7184A,B,P, or U by simply connecting the devices together with the communications cable supplied.

When these two devices are installed as a system, the burner properly adjusted and the Flame Quality Monitor initialized, The FQM provides continuous monitoring of the flame and gives warning when the combustion process has changed from its original operational state. This warning normally occurs three to five days before the primary control would shut down on safety lockout after the FQM alarm. Depending on the specific cause of the warning, the actual time may be shorter or longer.

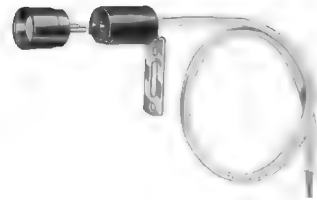
Alarm contacts are unpowered and provided both normally open (NO) and normally closed (NC) contacts to match the alarm system, tank monitoring system or phone dialer to which the FQM is connected. Typically, the FQM is attached as a zone to the home security system or can be connected to a small alarm in the home. In either case, the person responsible for monitoring the alarm function is provided with directions on how to contact the appropriate oil service dealer so that service can be scheduled at a mutually convenient time.

Dimensions, Approximate: 4-13/16 in. high, 4-3/16 in. wide, 1-9/32 in. deep (122 mm high, 108 mm wide, 33 mm deep)

Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

Product Number	Product Used With
QS7100F1001	Any of the Honeywell Electronic Oil Primary Controls, such as the R7184A,B,P, or U.
* TRADELINE models • SUPER TRADELINE models	

C554 Cadmium Sulfide Flame Detector



Photoconductive flame sensing device for sequencing oil burner systems.

- On flame failure, the light sensitive cadmium sulfide cell, in conjunction with flame sensing circuitry, causes the Protectorelay® control to shutdown the main oil burner.
- Glass-to-metal hermetic seal in plug-in cell prevents deterioration by humidity, soot or oil fumes.

Dimensions, Approximate: 1 7/8 in. high, 1 in. long, 1/2 in. wide (47 mm high, 25 mm long, 13 mm wide)

Temperature Ratings: 140 F (60 C)

Approvals

Underwriters Laboratories, Inc: UL Listed: File no. MP268, Vol. 39, Sec. 1, Guide MCCZ.

CSA Component Listed: File no. LR95329-1.

Accessories:

4074BJS Oil line mounting bracket assembly, including nut and screw

	Product Number	Electrical Connections	Lead Length		CAD Cells	Mounting Bracket	Product Used With	Replacement Parts
			(inch)	(mm)				
•	C554A1463	leadwires: NEC Class 1; Includes 2 flag 1/4 in. quick-connects.	60 in.	152.4 cm	130367 High Sensitivity CAD Cell 12 MA minimum sensitivity at 2 ft. candles	Type A, B, E, J, P	R4166, R4184, R8182, R8184, R8185, R8404, R8991, R7997	120320 Replacement Cad Cell. 7.5 mA minimum sensitivity at 2 ft. candles; 130367 Replacement Cad Cell. 12.0 mA minimum sensitivity at 2 ft. candles.
*	C554A1794	leadwires: NEC Class 1	60 in.	152.4 cm	130367 High Sensitivity CAD Cell 12 MA minimum sensitivity at 2 ft. candles	Type R	R4166, R4184, R8182, R8184, R8185, R8404, R8991, R7997	120320 Replacement Cad Cell. 7.5 mA minimum sensitivity at 2 ft. candles; 130367 Replacement Cad Cell. 12.0 mA minimum sensitivity at 2 ft. candles.
* TRADELINE models • SUPER TRADELINE models								

Oil Heating—Primary Controllers

R7184A,B,U Interrupted Electronic Oil Primary



Line voltage, safety rated, control for residential oil fired burners used in boilers, forced air furnaces and water heaters. When used with a cad cell flame sensor, operates an oil burner and optional oil valve. Can be used with both hydronic and forced air systems.

- Compatible with hydronic and forced air applications.
- Patented cad cell resistance readout.
- Available in 15-, 30-, and 45-second lockout times.
- Safe start check.
- Status indicator light monitors burner flame status and system lockout.
- Uses proven flame detection and monitoring systems.
- Optional valve-on delay, blower-off delay models:
- 15 second, or selectable 0 or 15 second valve-on delay.
- Zero time or selectable 0-, 2-, 4-, 6-minute blower-off delay.
- Oil valve control.
- Compatible with power venters without integral timers.
- Oil-resistant plastic cover for electronics.

Dimensions, Approximate: 4 5/32 in. long, 4 11/32 in. wide, 2 1/2 in. high (105.4 mm long, 110.5 mm wide, 63.5 mm high)

Temperature Ratings: -40 F to + 147 F (-40 C to + 64 C)

Approvals: UL & CUL Component Recognized

Alarm Load Ratings (pilot duty)	Alarm Load Ratings (resistive)
2amps@30Vac	2amps@30Vac

Electrical Ratings:

Contacts (full load)	Contacts (locked rotor)
7.4 A @ 120 Vac; 3.7 a @ 240 Vac	44.4 A @ 120 Vac; 22.2 A @ 240 Vac

Product Number	Ignition Type	Electrical Connections	Timing, Safety Switch	Lead Length		Mounting Bracket
				(inch)	(mm)	
R7184A1026	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	15 sec.	—	—	Junction box on main burner
R7184A1034	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	30 sec.	10 in.	254 mm	Mounts on standard 4X 4 in. junction box.
R7184A1042	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	45 sec.	10 in.	254 mm	Mounts on standard 4X 4 in. junction box.
R7184B1024	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	15 sec.	—	—	Junction box on main burner
R7184U1004	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	15 sec.	—	—	Junction box on main burner
R7184U1012	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	30 sec.	—	—	Junction box on main burner
R7184U1020	Interrupted	Burner motor, oil valve, ignition, cad cell, limit, thermostat, alarm	45 sec.	10 in.	254 mm	Mounts on standard 4X 4 in. junction box.

* TRADELINE models • SUPER TRADELINE models

R8184G Protectorelay® Oil Burner Control



Dimensions, Approximate: 4 3/8 in. high, 4 1/8 in. wide, 2 1/2 in. deep
(111 mm high, 104 mm wide, 64 mm deep)

Temperature Ratings: -40 F to +130 F (-40 C to +54 C)

Approvals

Underwriters Laboratories, Inc: UL Component Recognized; File no. MP268, Vol. 35 Sec. 1,3.

CSA Certified; File no. LR95329-1

Provides automatic, nonrecycling control of an intermittent ignition oil burner system.

- Controls oil burner, oil valve (if desired) and the ignition transformer in response to a call for heat.
- Solid state flame sensing circuit.
- LED on terminal strip indicates system lockout. Remote lockout indication available on some models.
- Enclosed safety switch with external reset button.
- Manual trip lever opens safety switch for system maintenance.
- Mounts on standard 4 x 4 in. junction box; select models may be mounted directly on burner housing.
- C554A Cadmium Sulfide Flame Detector and 24 Vac thermostat required.

Alarm Load Ratings (pilot duty)	Alarm Load Ratings (resistive)
75 VA @ 120/240 Vac, 50-60 Hz; 25 VA @ 24V, 50-60 Hz	1.5 A @ 120/240V, 50-60Hz; 3 A @ 24 V, 50-60 Hz

Electrical Ratings:

Contacts (full load)	Contacts (locked rotor)
7.4 A @ 120 Vac; 3.7 a @ 240 Vac	44.4 A @ 120 Vac; 22.2 A @ 240 Vac

	Product Number	Ignition Type	Timing, Safety Switch	Mounting Bracket	Product Used With	Includes
*	R8184G4009	Intermittent	45 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing.	
*	R8184G4025	Intermittent	45 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing.	Remote Alarm Power
*	R8184G4066	Intermittent	15 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing.	
*	R8184G4074	Intermittent	30 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing.	
*	R8184G4082	Intermittent	45 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. Includes remote alarm dry contacts.	Alarm
*	R8184G4090	Intermittent	15 sec.	For mounting on a standard 4 x 4 in. junction box or direct mounting to on burner housing.	With LED for lockout indication, and manual trip lever on safety switch to assure burner shutdown during servicing. Includes remote alarm dry contacts.	Alarm
* TRADELINE models • SUPER TRADELINE models						

Oil Heating—Primary Controllers

R8184M Protectorelay® Oil Burner Control



Operates the oil burner and oil valve (if desired) in response to a call for heat from a low voltage control circuit.

- Ignition is on whenever the burner is on (intermittent ignition—also called constant ignition).
- Solid state flame sensing circuit.
- External button to manually reset safety switch after lockout.
- Enclosed safety switch must be manually reset after safety shutdown.
- R8184M includes 40 VA transformer and Y and G terminals for connection of cooling equipment.
- Mounts on standard 4 x 4 in. junction box.
- C554A Cadmium Sulfide Flame Detector and a 24 Vac thermostat required.

Dimensions, Approximate: 4 3/8 in. high, 4 1/8 in. wide, 2 1/2 in. deep (111 mm high, 104 mm wide, 64 mm deep)

Temperature Ratings: -40 F to +130 F (-40 C to +54 C)

Approvals

Underwriters Laboratories, Inc: UL Component Recognized; File no. MP268, guide no. MCCZ2

Electrical Ratings:

Contacts (full load)	Contacts (locked rotor)
7.4 A @ 120 Vac; 3.7 a @ 240 Vac	44.4 A @ 120 Vac; 22.2 A @ 240 Vac

	Product Number	Ignition Type	Timing, Safety Switch	Mounting Bracket
*	R8184M1051	Intermittent	45 sec.	Mounts on standard 4 x 4 in. junction box.
* TRADELINE models • SUPER TRADELINE models				

RA116; RA117 Protectorelay® Controls



One-piece, stack-mounted oil burner primary controls that cycle the burner on and shut down the burner on flame loss or system malfunction.

- Combine a Protectorelay® unit for cycling the burner and a Pyrostat® flame detector for sensing temperature changes of flue gases up to 1000 F (556 C).
- Manual reset of safety switch required after ignition failure completely shuts off main burner.
- Include manual trip safety switch to assure burner shutdown during servicing.
- Mount with flange for mounting on curved or flat surfaces.
- Use with line voltage or 24 Vac Control Circuit.

Dimensions, Approximate: 6 in. high, 5 3/16 in. wide, 3 3/16 in. deep (152 mm high, 132 mm wide, 81 mm deep)

Approvals

Underwriters Laboratories, Inc: UL Listed; File no. MP268, Guide no. MCCZ.
CSA Certified; File no. LR95329-1

	Product Number	Ignition Type	Timing, Safety Switch	Mounting Bracket
*	RA116A1055	Intermittent	75 sec. Nominal	Mount with flange for mounting on curved or flat surfaces.
*	RA117A1047	Interrupted	75 sec. Nominal	Mount with flange for mounting on curved or flat surfaces.
* TRADELINE models • SUPER TRADELINE models				

Oil Primary Control Parts

OS Number	Description	Used With
120320	Replacement Cell Assembly, 400-1600 Ohm Sensitivity	
130367	Replacement Cell Assembly, 400-1000 Ohm Sensitivity	Replacement Cell Assembly (7.5 mA at 2 ft-candles)
32611	Grommet (Bulk Mdse)	Replacement Cell Assembly (12 mA at 2 ft-candles)
4074BJS	Oil line mounting bracket assembly, including nut and screw	Grommet (Bulk Mdse)

V4046A,B Magnetic Valves



For ON-OFF control of oil flow to domestic oil burner equipment

- Power interruption closes the valve immediately.
- Mount directly to pipeline or on support bracket.

Valve pattern: Straight through

Current (max amps at rated Vac/Hz): 0.115 amps

Electrical Ratings (power consumption): 8 W

Electrical Ratings (Vac): 120 Vac

Frequency (Hz): 60 Hz

Electrical Terminations: Two 36-in. (914 mm) leadwires

Flow Capacities: 5 gph to 35 gph (0.0005 L/s to 0.04 L/s)

Materials: Aluminum

Mounting: Directly in pipe or on support bracket

Size: 2 3/4 in. high, 1 5/8 in. wide, 2 5/8 in. deep (70 mm high, 41 mm wide, 67 mm deep)

Temperature Range: Ambient: 32 F to 115 F; max, fluid: 125 F
(Ambient: 0 C to 46 C) (max, fluid: 52 C)

Approvals

Underwriters Laboratories Inc: Listed: File no. MH1639, vol. 3, sec. 3, guide no. YIOZ

Canadian Standards Association: Certified: File no. LR95329-1

Factory Mutual: Approval

	Product Number	Type of Gas	Pipe Size		Operating Pressure		Pressure Ratings		Replacement Parts
			(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)	
*	V4046A1058	#2 fuel oil	1/8 in. NPT	3 mm	150 psi	1034 kPa	300 psi 150 psi	2068.4 kPa 1034.2 kPa	116649A Coil Assembly
	V4046A1074	#2 fuel oil	1/8 in. NPT	3 mm	300 psi	2068 kPa	300 psi 150 psi	2068.4 kPa 1034.2 kPa	116649A Coil Assembly
	V4046B1007	#2 fuel oil	1/8 in. NPT	3 mm	150 psi	1034 kPa	300 psi 150 psi	2068.4 kPa 1034.2 kPa	116671A Coil Assembly
	V4046B1049	#2 fuel oil	1/8 in. NPT	3 mm	300 psi	2068 kPa	300 psi 150 psi	2068.4 kPa 1034.2 kPa	116671A Coil Assembly

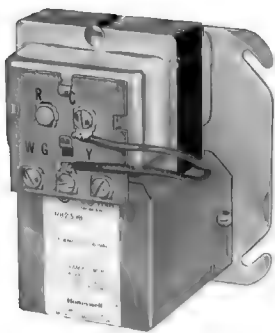
* TRADELINE models • SUPER TRADELINE models

Magnetic Valve Accessories

OS Number	Description	Used With
116649A	V4046A Merchandise	
116669A	200 Vac 50 Hz Coil Assembly for V4046C	—V4046C

Fan Centers

R8239 Control Center



Include NEMA standard transformer for excellent voltage control. Provide low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling or heating-cooling circuits.

- NEMA standard Type D transformer (included) powers low voltage control systems.
- Provide overload protection for transformer.
- Convenient connections for thermostat, and heating-cooling equipment wiring.
- Mount on standard 4 x 4 junction box.
- Can be mounted in any indoor location without additional enclosure.
- Relay is easily replaced without disturbing wiring.
- Include relay enclosures.

Dimensions, Approximate: 4 1/2 in. high, 4 3/16 in. wide, 3 3/32 in. deep (114 mm high, 106 mm wide, 79 mm deep)

Coil Ratings (inrush): 20 VA maximum, 17 VA nominal.

Coil Ratings (Sealed): 10 VA maximum, 9 VA nominal

Electrical Ratings (W): 12 W maximum

Approvals

Canadian Standards Association: Certified

NEMA: NEMA Standard DC20-1992

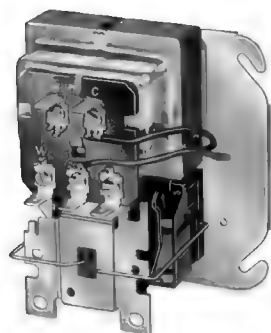
Underwriters Laboratories, Inc: UL Listed

Electrical Ratings:

At Full Load		At Locked Rotor	
120 Vac	240 Vac	120 Vac	240 Vac
12	6.9 A	72 A	41.4 A

	Product Number	Applications	Switching Action	Power Supply			Includes
				Vac	Primary	Secondary	
	R8239A1011	For single-or two speed fan.	SPDT	40 VA	240 Vac 208 Vac	26.5 V	R8222B
*	R8239A1052	For single-or two speed fan.	SPDT	40 VA	120 Vac	26.5 V	R8222B
•	R8239B1043	For system with F50 Electronic Air Cleaner humidifier and blower motor.	DPDT	40 VA	120 Vac	26.5 V	R8222D
•	R8239B1076	For system with F50 Electronic Air Cleaner humidifier and blower motor.	DPDT	50 VA	120 Vac 240 Vac 208 Vac	26.5 V	R8222D
*	R8239D1015	For single-speed fan and pilot duty circuit (24 Vac or millivoltage).	DPST (One Power Rated, One Pilot Duty)	40 VA	120 Vac	26.5 V	R8222U
* TRADELINE models • SUPER TRADELINE models							

R8285 Control Center



Provides low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling, or air conditioning systems.

- Transformer powers low voltage control systems and provides overload protection.
- Low voltage terminal board provides convenient connections for thermostat and heating/cooling equipment wiring.
- Mounts on standard 4x4 in. junction box.
- Relay is easily replaced without disturbing wiring.

Dimensions, Approximate: 4 3/16 in. high, 4 1/2 in. wide, 2 13/16 in. deep. (106 mm high, 114 mm wide, 71 mm deep)

Electrical Ratings (W): 11 W maximum

Approvals

Canadian Standards Association: Certified: File No. LR95329-17

Underwriters Laboratories, Inc: UL Component Recognized; File No. E4436, Vol.15, Sec.1, Guide No.XAPX2

Electrical Ratings:

	At Full Load		At Locked Rotor	
	120 Vac	240 Vac	120 Vac	240 Vac
R8285A,B,E	12	6.0 A	72 A	35 A
R8285D	12	6.9 A	72 A	35 A

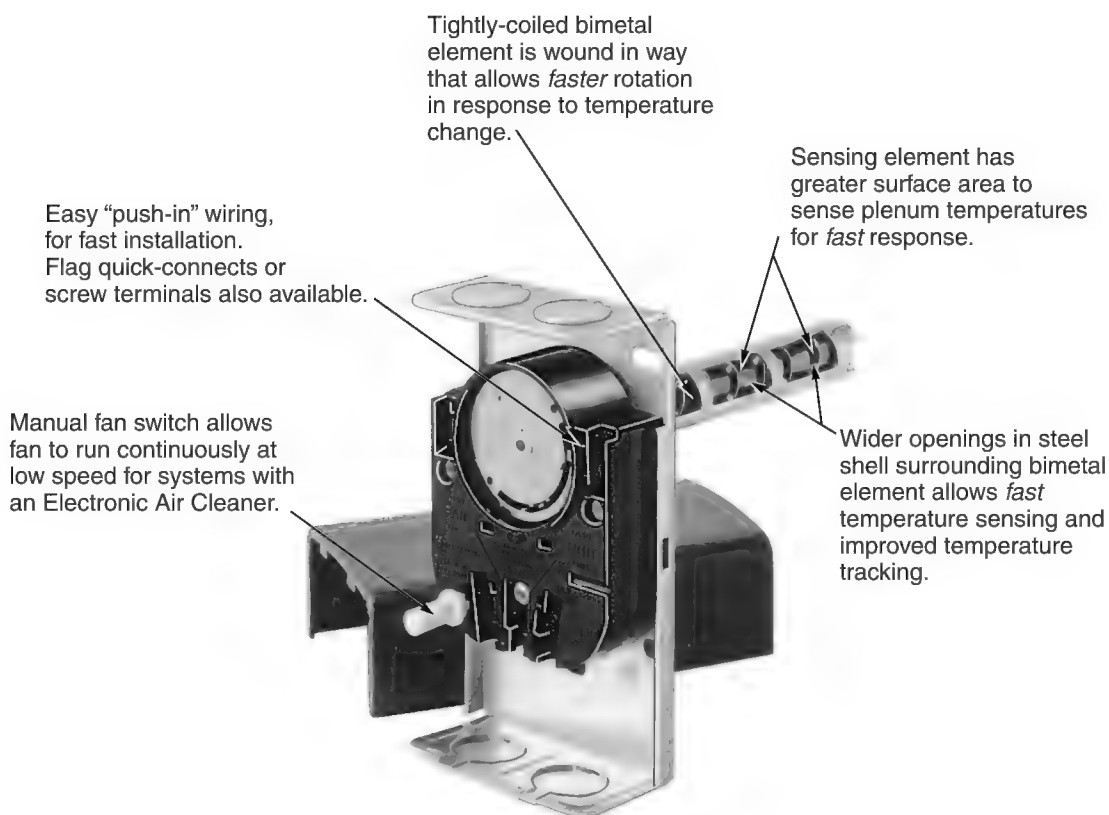
	Product Number	Applications	Switching Action	Power Supply			Includes
				Vac	Primary	Secondary	
*	R8285A1048	For single-or two speed fan.	SPDT	40 VA	120 Vac	26.5 V	R8222B
*	R8285B1038	For "Total Comfort" applications with electronic air cleaner, humidifier and blower motor.	DPDT	40 VA	120 Vac	26.5 V	R8222D
*	R8285B1053	For "Total Comfort" applications with electronic air cleaner, humidifier and blower motor.	DPDT	40 VA	120 Vac 240 Vac 208 Vac	26.5 V	R8222D
	R8285D5001	For Hydronic Applications; use with SV9600 SmartValve System and other systems that require 50 VA capacity.	DPST (One Power Rated, One Pilot Duty)	50 VA	120 Vac	26.5 V	R8222U
	R8285E1007	Replaces R8325C1004, Stevco 90-118, Or Mars 24012.	DPST (N.O., N.C.)	40 VA	120 Vac	26.5 V	R8222F
* TRADELINE models • SUPER TRADELINE models							

Limits and Controllers

Know Your Limits— Choose L4064 Fan and Limit Controls

Contractors who know their limits consistently choose Honeywell L4064 Fan and Limit Controls. And for good reason. You simply can't buy a better performing limit. L4064 limits are better by design . . . built in a way that allows them to react quickly to a temperature change in the plenum. And that helps them easily meet ANSI and AGA standards that limit maximum rise in plenum temperatures to 200 F. The L4064 is the fastest-responding fan and limit available. Its sensitive bimetal element reacts quickly to convected and radiant energy for superior temperature

sensing. Its case design allows inserting the bimetal element at the optimum position to sense plenum conditions. OEMs generally recommend replacing limits "like for like," because they design their equipment to operate best with a specific brand of limit. And most OEMs use Honeywell. By replacing a Honeywell limit with another Honeywell limit you ensure the equipment continues to operate the way it was designed and tested. See L4064 product description for specifications and ordering information.



M13177

L4064K Airstat Fan Safety Cutoff Controller



For control of high limit and fan motor in all types of forced air heating systems.

- Three wiring terminal options available for easy installation:
 - push-in receptacles for stripped wire
 - Female receptacles for 1/4 in. male flag connectors
 - field add-on screw terminals.
- Controls adapt to many competitive mounting holes in replacement applications.
- Available in a variety of fan and high limit setting ranges.
- L4064B,W models have manual fan switch that overrides fan control to keep fan running continuously.
- SUPER TRADELINE models include deluxe case with mounting adapters for easy installation and strain relief bushings to protect wiring from field abuse.

Dimensions, Approximate: 4 5/16 in. high, 3 in. wide, 1 5/8 in. deep excluding element (109 mm high, 76 mm wide, 41 mm deep excluding element)

Approvals

Canadian Standards Association: CSA Certified

Electrical Ratings:

Contacts (AFL @ 240 Vac & 277 Vac)	Fan (ALR)	Limit (AFL)	Limit (ALR)	Pilot Duty
7 A @ 240 Vac 14 A @ 120 Vac	42 A @ 240 Vac 84 A @ 120 Vac	4 A @ 240 Vac 8 A @ 120 Vac	24 A @ 240 Vac 48 A @ 120 Vac	2 A @ 24 Vac 0.25 A @ 0.25 to 12 Vdc

Accessories:

129250AA Double wing mounting flange assembly for Fan and Limit Control L4064

Product Number	Mounting	Element Insertion Length		Description
		(inch)	(mm)	
L4064K1006	Flush mounted	11 1/2 in.	292 mm	Fan and Limit Control
L4064K1014	Flush mounted	11 1/2 in.	292 mm	Fan and Limit Control

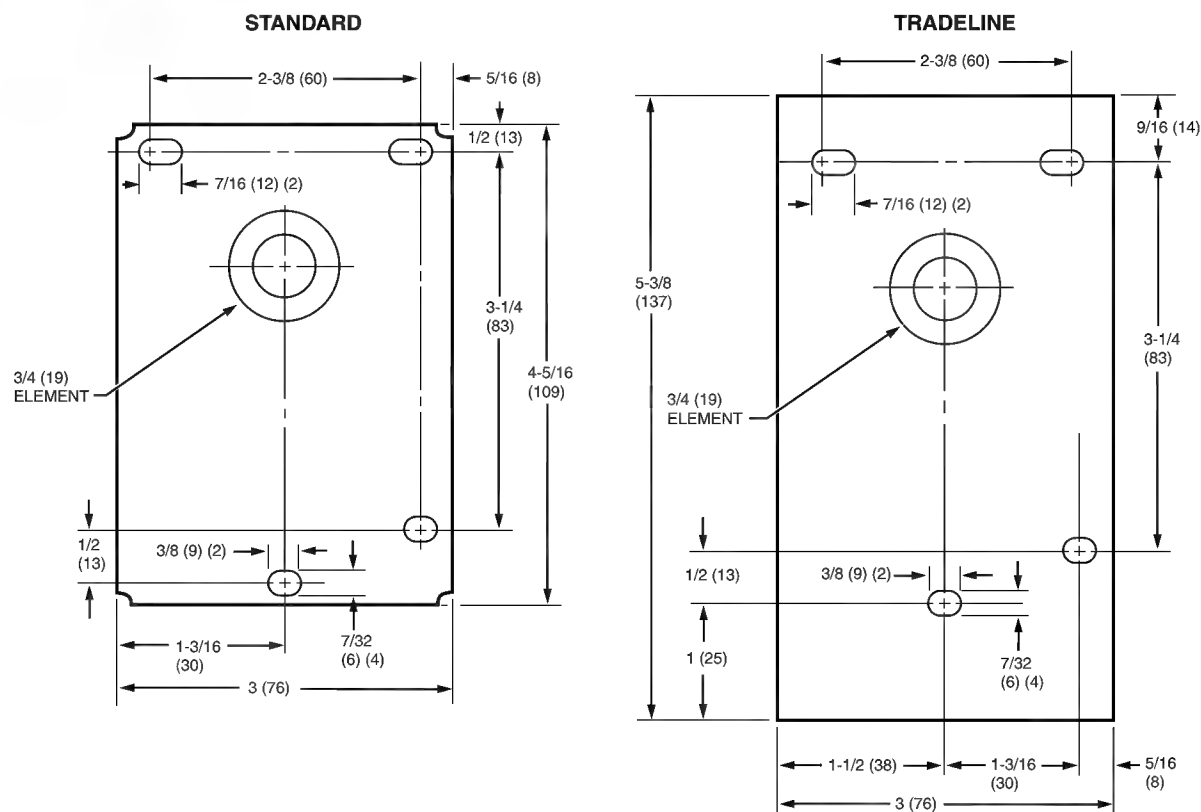
* TRADELINE models • SUPER TRADELINE models

Limits and Controllers

L4064B,D,J,W Fan and Limit Controllers



Dimension Diagrams



NOTE: OVERALL DEPTH WITH FAN SWITCH IS 2 INCHES (51MM);
MODELS LESS FAN SWITCH ARE 1-5/8 INCHES (41MM).

M16576

Application: Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop factory set at 200F (93 C). Replaces L4064A,B,E.

Maximum Ambient Temperature: Switch: 190F; Sensing Element: 350 F (Switch: 88 C; Sensing Element: 177 C)

Electrical Ratings:

	Contacts (AFL @ 240 Vac & 277 Vac)	Fan (ALR)	Limit (AFL)	Limit (ALR)	Pilot Duty
L4064B,D,J	7 A @ 240 Vac 14 A @ 120 Vac	42 A @ 240 Vac 84 A @ 120 Vac	4 A @ 240 Vac 8 A @ 120 Vac	24 A @ 240 Vac 48 A @ 120 Vac	2 A @ 24 Vac 0.25 A @ 0.25 to 12 Vdc
L4064W	7 A @ 240 Vac 14 A @ 120 Vac	—	4 A @ 240 Va c8 A @ 120 Vac	24 A @ 240 Vac 48 A @ 120 Vac	2 A @ 24 Vac 0.25 A @ 0.25 to 12 Vdc

Accessories:

129250AA Double wing mounting flange assembly for Fan and Limit Control L4064

For control of high limit and fan motor in all types of forced air heating systems.

- Three wiring terminal options available for easy installation:
 - push-in receptacles for stripped wire,
 - Female receptacles for 1/4 in. male flag connectors
 - field add-on screw terminals.
- Controls adapt to many competitive mounting holes in replacement applications.
- Available in a variety of fan and high limit setting ranges.
- L4064B,W models have manual fan switch that overrides fan control to keep fan running continuously.
- SUPER TRADELINE models include deluxe case with mounting adapters for easy installation and strain relief bushings to protect wiring from field abuse.

	Product Number	Mounting	Element Insertion Length		Fan-on Range		Fan-off Range	
			(inch)	(mm)	(F)	(C)	(F)	(C)
•	L4064B1451	Rigid bracket	11 1/2 in.	292 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10 C to 96 C
•	L4064B1469	Rigid bracket	5 in.	127 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10 C to 96 C
*	L4064B2210	Surface mounted	11 1/2 in.	292 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10 C to 96 C
*	L4064B2228	Surface mounted	5 in.	127 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10 C to 96 C
*	L4064B2236	Surface mounted	8 in.	203 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10 C to 96 C
	L4064D1002	Surface mounted	1 1/2 in.	38 mm	125 F	69 C	100 F	56 C
	L4064J1008	Rigid bracket	11 1/2 in.	292 mm	125 F	69 C	100 F	56 C
*	L4064W1080	Rigid bracket Surface mounted	5 in.	127 mm	Upon call for heat.	Upon call for heat.	50 F to 200 F	10 C to 96 C
*	L4064W1098	Rigid bracket Surface mounted	8 in.	203 mm	Upon call for heat.	Upon call for heat.	50 F to 200 F	10 C to 96 C
*	L4064W1106	Swivel Rigid bracket Surface mounted	11 1/2 in.	292 mm	Upon call for heat.	Upon call for heat.	50 F to 200 F	10 C to 96 C
	L4064W1163	Swivel Rigid bracket Surface mounted	5 in.	127 mm	Upon call for heat.	Upon call for heat.	50 F to 200 F	10 C to 96 C
* TRADELINE models • SUPER TRADELINE models								

L4064R Limit Controllers



Application: Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop factory set at 200F (93 C). Replaces L4064A,B,E.

Dimensions, Approximate: 4 5/16 in. high, 3 in. wide, 1 5/8 in. deep excluding element (109 mm high, 76 mm wide, 51 mm deep excluding element)

Maximum Ambient Temperature: Switch: 190 F; Sensing Element: 250 F above limit setting (Switch: 88 C; Sensing Element: 121 C above limit setting)

High Limit Temperature Range: 150 F to 350 F (66 C to 177 C)

For control of high limit and fan motor in all types of forced air heating systems.

- Three wiring terminal options available for easy installation:
 - push-in receptacles for stripped wire,
 - Female receptacles for 1/4 in. male flag connectors
 - field add-on screw terminals.
- Controls adapt to many competitive mounting holes in replacement applications.
- Available in a variety of fan and high limit setting ranges.
- L4064B,W models have manual fan switch that overrides fan control to keep fan running continuously.
- SUPER TRADELINE models include deluxe case with mounting adapters for easy installation and strain relief bushings to protect wiring from field abuse.

Operating Temperature Range: -40 F to +190 F (-40 C to +88 C)

Approvals

Underwriters Laboratories, Inc: UL Component recognized--File MP466, Guide MBPR2.

Canadian Standards Association: Certified

Electrical Ratings:

Contacts (AFL @ 240 Vac & 277 Vac)	Fan (ALR)	Limit (AFL)	Limit (ALR)
14 A @ 120 Vac	84 A @ 120 Vac	8 A @ 120 Vac	48 A @ 120 Vac

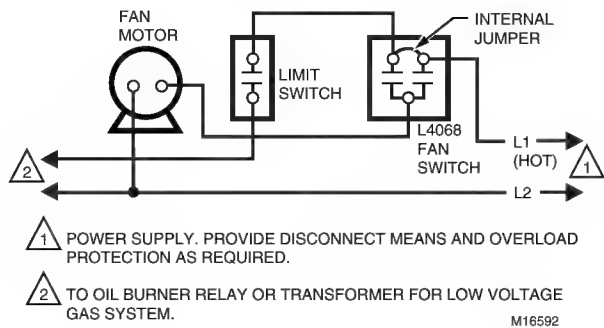
Product Number	Mounting	Switching Action	Element Insertion Length		Fan-on Range		Fan-off Range	
			(inch)	(mm)	(F)	(C)	(F)	(C)
L4064R1100	Rigid or swivel bracket mounting only.	Fan switch makes and limit switch breaks on temperature rise.	11 1/2 in.	292 mm	100 F to 305 F	38 C to 152 C	50 F to 200 F 80 F to 290 F	27 C to 143 C
* TRADELINE models • SUPER TRADELINE models								

Limits and Controllers

L4068 Fan Control



Typical wiring connections for L4068E, F used in forced air heating system



Operate furnace fan motor according to air temperature in all types of forced air heating systems.

- Flat bimetal element, inserted into the airstream, actuates a snap-acting switch.
- Manual switching for continuous fan operation.
- Push-in terminals.

Dimensions, Approximate: 3 3/4 in. high, 2 5/16 in. wide, 2 3/8 in. deep (95 mm high, 59 mm wide, 60 mm deep)

Maximum Ambient Temperature: Switch: 190 F; max at bimetal element: 350 F (Switch: 88 C; max at bimetal element: 177 C)

High Limit Temperature Range: 80 F to 120 F (27 C to 49 C)

Approvals

Underwriters Laboratories, Inc: UL Listed

Canadian Standards Association: CSA Certified.

Electrical Ratings:

Contacts (AFL @ 240 Vac & 277 Vac)	Fan (ALR)	Pilot Duty
7 A @ 240 Vac 14 A @ 120 Vac	42 A @ 240 Vac 84 A @ 120 Vac	50 Va @ 24 Vac

Product Number	Switching Action	Element Insertion Length		Description
		(inch)	(mm)	
* L4068E1047	SPST, snap acting makes on temperature rise.	3 in.	76 mm	Fan Control
* L4068E1054	SPST, snap acting makes on temperature rise.	7 in.	178 mm	Fan Control
L4068F1078	SPST, snap acting makes on temperature rise.	3 in.	76 mm	Fan Control
L4068F1086	SPST, snap acting makes on temperature rise.	7 in.	178 mm	Fan Control
* TRADELINE models • SUPER TRADELINE models				

L4069 Limit Controller



Used as a high temperature burner cutout on all types of warm air furnaces.

- Flat bimetal element in plenum actuates spst snap-action switch.
- High limit stop factory-set.

Dimensions, Approximate: 3 3/4 in. high, 2 5/16 in. wide, 2 in. deep (95 mm high, 59 mm wide, 51 mm deep)

Maximum Ambient Temperature: Max. at switches: 190 F; max. at element: 350 F (Switch: 88 C; Sensing Element: 177 C)

Differential Temperature: 25 F, fixed (14 C, fixed)

Operating Temperature Range: 180 F to 250 F (82 C to 121 C)

Approvals

Underwriters Laboratories, Inc: UL Listed;

Canadian Standards Association: CSA Certified.

Electrical Ratings:

Limit (AFL)	Limit (ALR)	Pilot Duty
4 A @ 240 Vac	24 A @ 240 Vac	50 Va @ 24 Vac
8 A @ 120 Vac	48 A @ 120 Vac	0.25 A @ 0.25 to 12 Vdc

Product Number	Switching Action	Element Insertion Length		Description
		(inch)	(mm)	
L4069A1060	SPST snap-action switch	7 in.	178 mm	Limit Control
* L4069A1078	SPST snap-action switch	3 in.	76 mm	Limit Control

* TRADELINE models • SUPER TRADELINE models

L6064A Fan and Limit Controllers

Application: Turns fan on and off according to plenum temperature. With helical bimetal sensing element. High limit stop factory set at 200F (93 C). Replaces L4064A,B,E.

Dimensions, Approximate: 4 5/16 in. high, 3 in. wide, 1 5/8 in. deep excluding element (109 mm high, 76 mm wide, 41 mm deep excluding element)

Maximum Ambient Temperature: Switch: 190 F; max at bimetal element: 350 F (Switch: 88 C; max at bimetal element: 177 C)

Electrical Ratings:

Contacts (AFL @ 240 Vac & 277 Vac)	Fan (ALR)	Limit (AFL)	Limit (ALR)	Pilot Duty
14 A @ 120 Vac	84 A @ 120 Vac	8 A @ 120 Vac	48 A @ 120 Vac	2 A @ 24 Vac

Product Number	Mounting	Timing	Switching Action	Element Insertion Length		Fan-on Range		Fan-off Range	
				(inch)	(mm)	(F)	(C)	(F)	(C)
L6064A1037	Rigid or swivel bracket or surface mounting.	Fan comes on 20 to 90 seconds after call for heat.	Normally closed fan switch breaks, normally open fan switch makes and high limit switch breaks on temperature rise.	1 1/2 in.	292 mm	65 F to 215 F	18 C to 102 C	50 F to 200 F	10C to 93 C
L6064A1052	Rigid or swivel bracket or surface mounting.	—	SPDT switch makes on temperature rise.	5 in.	203 mm	125 F	18 C to 102 C	100 F	10C to 93 C
L6064A1078	Rigid or swivel bracket or surface mounting.	—	SPDT switch makes on temperature rise.	11 1/2 in.	203 mm	125 F	18 C to 102 C	100 F	10C to 93 C
L6064A1045	Rigid or swivel bracket or surface mounting.	Fan comes on 20 to 90 seconds after call for heat.	Normally closed fan switch breaks, normally open fan switch makes and high limit switch breaks on temperature rise.	8 in.	203 mm	125 F	18 C to 102 C	100 F	10C to 93 C

* TRADELINE models • SUPER TRADELINE models

Limits and Controllers

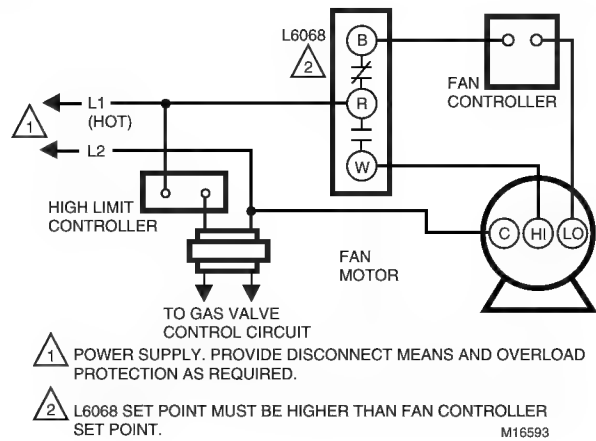
L6068 Air Switch



Used in downflow furnaces to prevent reverse air circulation and to provide protection against excessive temperatures.

- L6068 available with fixed or adjustable temperature setting; differential is fixed.
- Bimetal sensing element actuates switch.
- Push-in terminals.
- Available with and without case and cover.

Typical wiring connections for L6068 used to control a two-speed fan motor, R-W makes, R-B breaks on temperature rise



Product Number	Element Insertion Length		Description
	(inch)	(mm)	
L6068A1017	7 in.		Fan Control and Air Switch

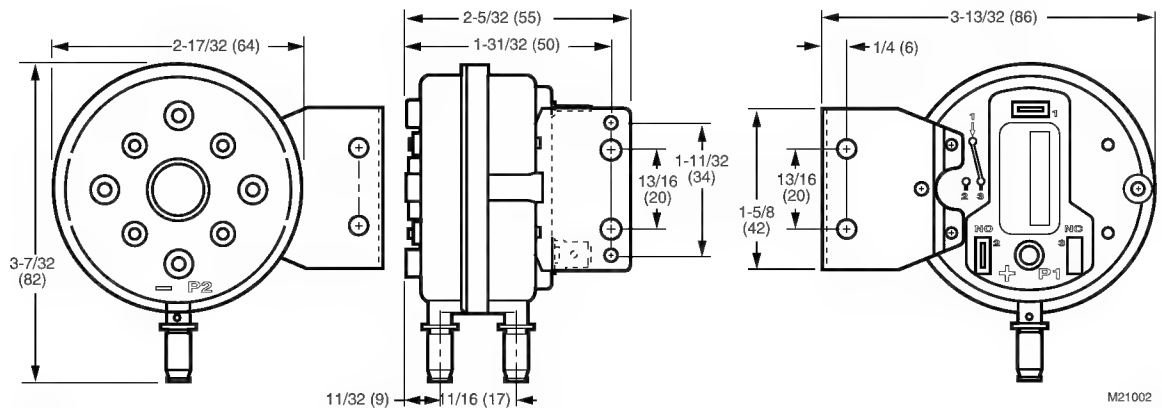
* TRADELINE models • SUPER TRADELINE models

Airflow Differential IS Pressure Switch



The IS Series of pressure sensing switches offers the same proven compression spring and precision snap acting electrical switch as the other Honeywell popular and widely used current models.

Dimension Diagrams



Ambient Temperature Range: -40 F to +190 F (-40 C to +88 C)
Approvals:
Canadian Standards Association: Listed

CE: Approved
Factory Mutual: Approved
Underwriters Laboratories, Inc: Listed

Product Number	Additional Features	Connection Type	Electrical Ratings	Overpressure Rating	Setpoint
IS22010051F5052	Straight fittings; SPST NO contacts; Calibrated Setpoint	1/4 in. Compression	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	3-14 in. w.c.	0.10 ± 0.05 in. wc PF
IS22020051F5125	Straight fittings; SPST NO contacts; Calibrated Setpoint	1/4 in. Compression	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	3-14 in. w.c.	0.20±.05 in. wc PF
IS22035051F5126	Straight fittings; SPST NO contacts; Calibrated Setpoint	1/4 in. Compression	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	3-14 in. w.c.	0.35±.05 in. wc PF

* TRADELINE models • SUPER TRADELINE models

Limits and Controllers

Airflow Differential Pressure Switch



Dimensions, Approximate: 6 in. x 5 1/2 in. x 3 1/8 in.
Ambient Temperature Range: -40 F to +190 F (-40 C to +88 C)
Approvals:

Airflow Differential Pressure Switches are used to sense positive, negative, or differential air pressure in HVAC systems. They provide high or low limit with alarm or high limit shutdown with manual reset.

- Models available with compression or barb fittings SPDT contacts on automatic reset models
- SPST n. c. contacts on manual reset models
- Electrical switch enclosed in metal box with cover Reliable pneumatic operation
- UL and CSA Listed, FM approved Adjustable setpoint

Canadian Standards Association: Listed
Factory Mutual: Approved
Underwriters Laboratories, Inc: Listed

Product Number	Additional Features	Connection Type	Electrical Ratings	Overpressure Rating
AP5027-30	Barbed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset. Compressed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset	1/4 in. Compression	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	.5 psi, 13.85 in. wc, or 3.44 kPa
AP5208-30	Barbed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset. Compressed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset	—	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	.5 psi, 13.85 in. wc, or 3.44 kPa
AP5210-30	Barbed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset. Compressed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset	1/4 in. Compression	278 VA pilot duty, 24 Vac; 300VA pilot duty, 120 to 277 Vac; 15A non-inductive to 277 Vac max; 10 mA @5 Vdc (gold-flash contacts)	.5 psi, 13.85 in. wc, or 3.44 kPa

* TRADELINE models • SUPER TRADELINE models

Differential Pressure Switch



Dimensions, Approximate: 2.88 in. x 1.875 in. x 3.22 in.
Ambient Temperature Range: 32 F to 190 F (0 C to 88 C)
Approvals:
Approvals, Australia Gas: Listed

The Series 3000 features cost effective, snap-acting electrical switches and field adjustable set points with a visual scale for easy set point selection.

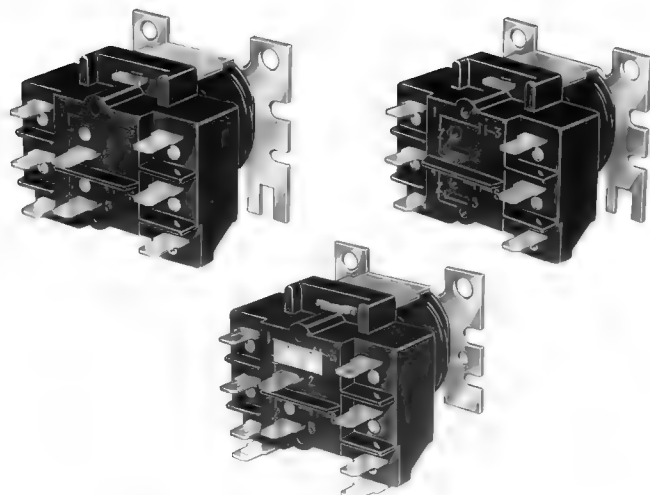
- UL recognized, CSA certified, as an operating, limit or safety control
- Built in overpressure protection designed to eliminate stress on other critical operating units
- Field adjustable pressure set points. Factory calibration available upon request
- Optional Features
- Pressure ranges as low as 3" WC up to 40 PSI
- SPST, SPDT or DPDT switching logic
- A variety of mounting pan and pressure fitting materials; plated steel, stainless steel or injection molded plastic
- Wide array of pressure fittings; 1/8" NPT male, 3/16" barbed, 1/8", 3/16" or 1/4" compression, or 1/8" NPT female with 1/2" conduit male external thread for mounting
- Fitting or bracket mounting options
- Specialty diaphragm materials; Buna-N, EPDM, Hydrin
- Models available with or without wiring enclosures

Canadian Standards Association: CSA file No. LR45785
CE: Approved
Underwriters Laboratories, Inc: UL

Product Number	Additional Features	Connection Type	Electrical Ratings	Setpoint
AP3501-4038	Compressed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset	1/8" NPT male, 304L stainless	25 Amps, non-inductive, 120 to 277 VAC	2 to 22 PSIG PR or PF
3008	Barbed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset.	3/16 in. Barbed	25 Amps, non-inductive, 120 to 277 VAC	3 to 15 PSIG PR or PF
3033	Barbed fittings; SPDT contacts; ADJUSTABLE RANGE: .05" ± .02" WC TO 12.0" WC PR. Auto reset.	3/16 in. Barbed	25 Amps, non-inductive, 120 to 277 VAC	2 to 22 PSIG PR or PF

* TRADELINE models • SUPER TRADELINE models

R4222; R8222 General Purpose and R8228 Heavy Duty Switching Relays



Provide general purpose and heavy duty switching for refrigeration and air conditioning equipment, appliances, vending machines and similar applications.

- Molded terminal numbers and circuit diagram on top of relay provide easy identification for wiring and checking system operation.
- Untaped coil assures cooler operation.
- Laminated magnet construction for higher efficiency.
- Base designed for easy replacement of competitive relays.
- Double quick-connect coil terminals.
- Plug compatible with Steveco 90-340 and Mars 90340.

Dimensions, Approximate: 1 7/8 in. high, 2 5/32 in. wide, 2 3/8 in. deep (48 mm high, 55 mm wide, 60 mm deep.)

Frequency: 50/60 Hz

Temperature Ratings: -20 F to +155 F (-29 C to +68 C)

Approvals:

Canadian Standards Association: Approved

CE: Approved

Underwriters Laboratories, Inc: UL Component Recognized

Electrical Ratings:

	Contacts			Pilot Duty Ratings
	Full Load	At Locked Rotor	Resistive	
R4222B,D	3 A @ 480 Vac 6 A @ 208 Vac, 240 Vac, 277 Vac 12 A @ 120 Vac	18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	10 A @ 480 Vac 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); Powerpile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc
R4222N	3 A @ 480 Vac 6 A @ 208 Vac, 240 Vac, 277 Vac 12 A @ 120 Vac	18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	Pilot Duty: 3 A @ 277 Vac (0.75 power factor). 10 A @ 480 Vac 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); Powerpile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc
R8222B	3 A @ 480 Vac 6 A @ 208 Vac, 240 Vac, 277 Vac 12 A @ 120 Vac	18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	10 A @ 480 Vac 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); Powerpile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc
R8222C		18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	—	Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); Powerpile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc
R8222D,N,V		18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	10 A @ 480 Vac 20.8 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	Minimum: 3 VA @ 24 Vac, 120 Vac, & 480 Vac; Maximum: 25 VA @ 24 Vac, 125 VA @ 120 Vac, 240 Vac, & 480 Vac; Resistive: 3 A @ 277 Vac (0.75 power factor); Powerpile: (Normally Open Contacts Only) 0.25 A @ 0.25 to 12 Vdc
R8228A,B	5 A @ 480 Vac 12 A @ 277 Vac 18 A @ 208 Vac, 240 Vac 16/18 A @ 120 Vac	30 A @ 480 Vac 72 A @ 208 Vac, 240 Vac, 277 Vac 96/72 A @ 120 Vac	12.5 A @ 480 Vac 25 A @ 120 Vac, 208 Vac, 240 vac, 277 Vac	—
R8228D	3.0 A @ 480 Vac 5.5 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	8 A @ 480 Vac15 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	12.5 A @ 480 Vac25 A @ 120 Vac, 208 Vac, 240 vac, 277 Vac	—

Accessories:

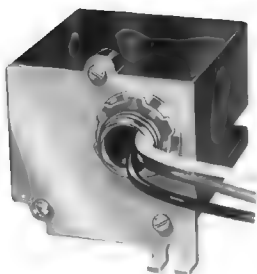
129384A Case and Cover Assembly

	Product Number	Coil Ratings Voltage (V)	Switching	Description
*	R4222B1082	120 V	SPDT	General Purpose Relay
*	R4222D1013	120 V	DPDT	General Purpose Relay
*	R4222D1021	208/240 V	DPDT	General Purpose Relay
	R4222D1070	277 V	DPDT	General Purpose Relay
*	R4222N1002	120 V	Dpdt- Pilot Duty	General Purpose Relay
*	R8222B1067	24 Vac	SPDT	General Purpose Relay
	R8222C1008	24 Vac	Dpst, N.O.	General Purpose Relay
* TRADELINE models • SUPER TRADELINE models				

Relays

	Product Number	Coil Ratings Voltage (V)	Switching	Description
*	R8222D1014	24 Vac	DPDT	General Purpose Relay
*	R8222N1011	24 Vac	DPDT	General Purpose Relay
*	R8222V1003	24 Vac	Dpdt (One Power and One Pilot Duty)	General Purpose Relay
*	R8228A1014	24 Vac	SPST N.O.	General Purpose Relay
*	R8228B1012	24 Vac	SPDT	General Purpose Relay
	R8228D1018	24 Vac	Dpst, N.O.	General Purpose Relay
* TRADELINE models • SUPER TRADELINE models				

R4225; R8225 Fan Relay



Provide general purpose and heavy duty switching for refrigeration and air conditioning equipment, appliances, vending machines and similar applications.

- Molded terminal numbers and circuit diagram on top of relay provide easy identification for wiring and checking system operation.
- Untaped coil assures cooler operation.
- Laminated magnet construction for higher efficiency.
- Base designed for easy replacement of competitive relays.
- Double quick-connect coil terminals.
- Plug compatible with Steveco 90-340 and Mars 90340.

Dimensions, Approximate: 2 11/16 in. high, 2 1/2 in. wide, 3 7/16 in. deep (68 mm high, 64 mm wide, 87 mm deep)

Frequency: Temperature Ratings: 115 F (46 C)

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: UL Listed: File No. E14480, Vol. 1, Sec. 3, Guide No. NLDX

Electrical Ratings:

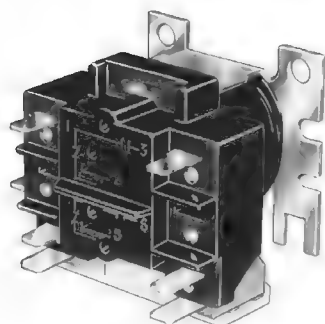
	Contacts		
	Full Load	At Locked Rotor	Resistive
R4225A1008	N.O. 8.0 A, N.C. 7.0 A Aux. 2.0 A @ 240 Vac N.O. 14.0 A, N.C. 14.0 A Aux. 3.0 A @ 120 Vac	N.O. 48.0 A, N.C. 42.0 A Aux. 12.0 A @ 240 Vac N.O. 84.0 A, N.C. 84.0 A Aux. 18.0 A @ 120 Vac	N.O. 8.0 A, N.C. 7.0 A Aux. 2.0 A @ 240 Vac N.O. 16.0 A, N.C. 14.0 A Aux. 3.0 A @ 120 Vac
R8225A1017	N.O. 8.0 A, N.C. 7.0 A @ 240 Vac N.O. 14.0 A, N.C. 14.0 A @ 120 Vac	N.O. 48.0 A, N.C. 42.0 A @ 240 Vac N.O. 84.0 A, N.C. 84.0 A @ 120 Vac	N.O. 8.0 A, N.C. 7.0 A @ 240 Vac N.O. 16.0 A, N.C. 14.0 A @ 120 Vac
R8225B1007	8.0 A @ 240 Vac 14.0 A @ 120 Vac	48.0 A @ 240 Vac 84.0 A @ 120 Vac	8.0 A @ 240 Vac 16.0 A @ 120 Vac
R8225D1003	N.O. 8.0 A, Aux. 2.0 A @ 240 Vac N.O. 14.0 A, Aux. 3.0 A @ 120 Vac	N.O. 48.0 A, Aux. 12.0 A @ 240 Vac N.O. 84.0 A, Aux. 18.0 A @ 120 Vac	N.O. 8.0 A, Aux. 2.0 A @ 240 Vac N.O. 16.0 A, Aux. 3.0 A @ 120 Vac

Accessories:

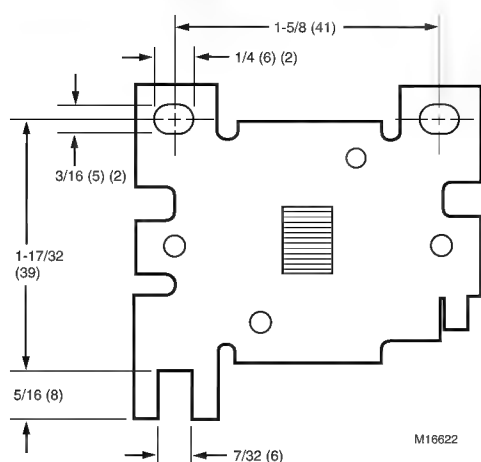
134259/0021 Flush mounting bracket for R8225

	Product Number	Coil Ratings Voltage (V)	Switching	Description
	R4225A1008	120 V @ 60 Hz	SPDT, 1 N.O., 1 N.C.	Fan Relay
*	R8225A1017	24 Vac	SPDT	Fan Relay
	R8225B1007	24 Vac	SPST	Fan Relay
	R8225D1003	24 Vac	Dpst, N.O.	Fan Relay
* TRADELINE models • SUPER TRADELINE models				

R8229 Electric Heat Relay



Dimensions Diagram



Normally Closed Relays And Contactors For Load Control Systems.

- Close and leave load operating in case of wiring or control problem, or relay malfunction.
- Consume no power while load is powered; require power only to shed load.
- Operate directly from a pilot duty rated relay in the load control system.

Electrical Connections (main): #10 combination head screws

Temperature Ratings: -40 F to +165 F (-40 C to +74 C)

Approvals:

Canadian Standards Association: Recognized

CE: Approved

Underwriters Laboratories, Inc: UL Component Recognized

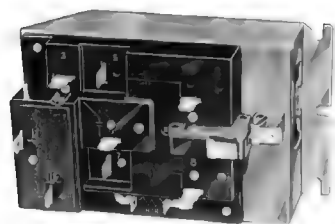
Electrical Ratings:

Contacts		
Full Load	At Locked Rotor	Resistive
2.8 A @ 600 Vac	14 A @ 600 Vac	10.0 A @ 600 Vac
3.5 A @ 480 Vac	17.5 A @ 480 Vac	12.5 A @ 480 Vac
7.0 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	35 A @ 120 Vac, 208 Vac, 240 Vac, 277 Vac	25 A @ 120 Vac, 208 Vac, 240 vac, 277 Vac

Product Number	Coil Ratings Voltage (V)	Switching	Description
R8229A1005	24 Vac	DPST	Electric Heater Relay
• R8229A1021	24 Vac	DPST	Electric Heat Relay

* TRADELINE models • SUPER TRADELINE models

R8330 Electric Furnace Sequencer



Dimensions, Approximate: 3 1/16 in. high, 4 13/16 in. wide, 2 11/32 in. deep (78 mm high, 122 mm wide, 60 mm deep.)

Electrical Connections (main): terminals

Temperature Ratings: -20 F to +150 F (-29 C to +66 C)

Approvals:

Canadian Standards Association: Certified

Underwriters Laboratories, Inc: UL Listed

One control switches a fan and up to three elements on and off in sequence.

- Isolated fan switch has positive interlock to assure fan is on when the element is on, and fan is off when the element is off.
- Replaces any of the ten models in our line and many competitive devices.
- Combination rating on the first element switch allows replacing devices having fan and first element controlled by the same switch without rewiring the furnace.
- Auxiliary switch controls a second R8330 in application with more than three elements.
- Cycles ON within two minutes, OFF within four minutes.
- Ten-second minimum delay between stages (make sequence and break sequence.)
- Timings meet EEI-NEMA and ARI 280 Standards.

Electrical Ratings:

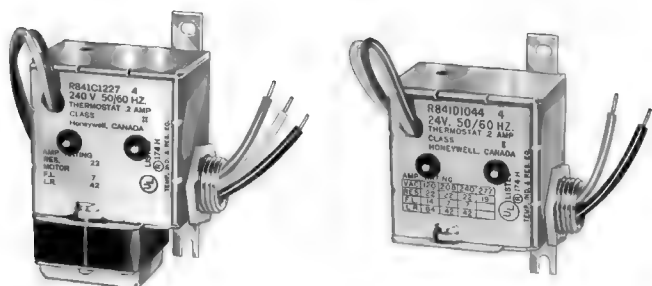
Contacts	
Full Load	At Locked Rotor
4.9 A @ 277 Vac 3/4 hp;	29.4 A @ 277 Vac 3/4 hp;
6.9 A @ 120 Vac, 208 Vac,	41.4 A @ 120 Vac, 208 Vac,
240 Vac 1/3 hp;	240 Vac 1/3 hp;
7.2 A @ 120 Vac	43.2 a @ 120 Vac

Product Number	Coil Ratings Voltage (V)	Description
* R8330D1039	24 Vac	Electric Furnace Sequencer

* TRADELINE models • SUPER TRADELINE models

Relays

R841 Electric Heating Relay



Dimensions, Approximate: 3 7/8 in. high, 2 13/16 in. wide, 1 1/2 in. deep (98 mm high, 71 mm wide, 38 mm deep)

Electrical Connections (main): 18 in. (457 mm)

Frequency: 50/60 Hz

Temperature Ratings: -20 F to +150 F (-29 C to +66 C)

Approvals:

Canadian Standards Association: Certified

Use with two-wire, 24 Vac thermostat to control electric heating equipment such as baseboard, ceiling cable and duct heaters.

- Operate with each cycle of the thermostat (4 to 6 cycles per hour).
- Each relay switches up to a 5,000 W load.
- Contacts make and break in about 75 seconds.
- Mount in any position.
- Includes 1/2 in. (13 mm) male conduit bushing.

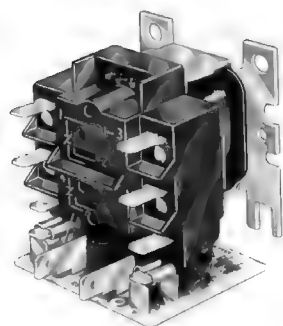
Underwriters Laboratories, Inc: UL Listed

Electrical Ratings:

Contacts		
Full Load	At Locked Rotor	Resistive
7.0 A @ 208 Vac, 240 Vac, 277 Vac, 14 A @ 120 Vac	42 A @ 208 Vac, 240 Vac, 277 Vac, 84 A @ 120 Vac	22 A @ 120 Vac, 208 Vac, 240 Vac, 19 a @ 277 Vac

	Product Number	Coil Ratings Voltage (V)	Switching	Description
*	R841C1201	24 Vac	SPST	Electric Heat Relay
	R841C1219	24 Vac	SPST	Electric Heat Relay
*	R841C1227	24 Vac	SPST	Electric Heat Relay
*	R841D1044	24 Vac, requires separate 24 V transformer.	SPST	Electric Heat Relay
*	R841E1068	24 Vac	SPST	Electric Heat Relay
* TRADELINE models • SUPER TRADELINE models				

ST82 Fan Manager



Dimensions, Approximate: 2 7/32 in. high, 2 1/16 in. wide, 2 9/16 in. deep (56 mm high, 52 mm wide, 65 mm deep)

Electrical Connections (main): 80 seconds

Temperature Ratings: X-20 F to +150 F (-29 C to +66 C)

Approvals:

Electrical Ratings:

Contacts		
Full Load	At Locked Rotor	Resistive
3 A @ 480 Vac 6 A @ 208 Vac, 240 Vac, 277 Vac 12 A @ 120 Vac	18 A @ 480 Vac 35 A @ 208 Vac, 240 Vac, 277 Vac 60 A @ 120 Vac	15 A @ 208 Vac, 240 Vac, 277 Vac 15 A @ 120 Vac 10 A @ 480 Vac

Use in compressor-run air conditioning, heat pump systems and heating-cooling systems. Delays the indoor blower shutoff after the compressor has shut off.

- Eighty-second delay on break.
- Combination electronic time delay board and R8222 relay saves wiring time.
- Molded terminal numbers and circuit diagram on top of relay and letter-coded terminals on time delay board provide easy identification for wiring and system checkout.
- Laminated magnet construction for high efficiency.
- Reduces stratification and saves energy.

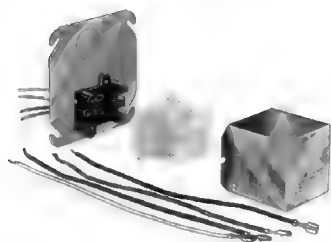
Canadian Standards Association: Certified: File No. LR95329-17

CE: Approved

Underwriters Laboratories, Inc: UL Listed: File No. MP466, Vol. 22, Sec. 1, Guide No. MBPR2.

	Product Number	Coil Ratings Voltage (V)	Delay Timing	Switching	Description
*	ST82B1030	24 Vac	80 seconds	SPDT	Time Delay Relay
*	ST82D1004	24 Vac	80 seconds	DPDT	Time Delay Relay
* TRADELINE models • SUPER TRADELINE models					

Q633 Plate-Mounted Relay Receptacle



For installing R4222, R8222 and R4228, R8228 relays on junction boxes.

- Use with appropriate relay and AT72D1683 or AT72D1691 SUPER TRADELINE Transformer.
- Includes relay receptacle, cover and eight leadwires.

Dimensions, Approximate: 4 in. x 4 in. plate (102 x102 mm plate)

Approvals:

Canadian Standards Association: Recognized

CE: Approved

Underwriters Laboratories, Inc: UL Component Recognized

	Product Number	Description
*	Q633A1007	Plate Mounted Relay Receptacle
* TRADELINE models • SUPER TRADELINE models		

Relay Accessories

OS Number	Description	Used With
129384A	Case and Cover Assembly	—
133983B	Cover and Case Assembly	Approved
134259/0021	Flush mounting bracket for R8225	
4074BVJ	Plug-in receptacle	Approved

Relay Parts

OS Number	Description	Used With
135887	Bail Lock Down Assembly	UL Listed
135959	Receptacle	Approved

Transformers

NEMA Standard Transformers Give You Better Control.

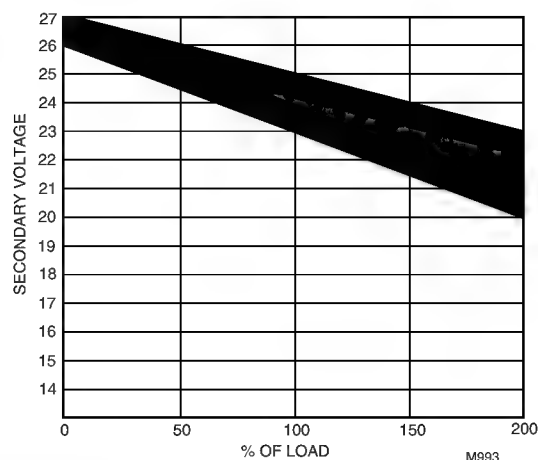
PERFORM within TIGHT LIMITS.

To meet the National Electrical Manufacturers Association (NEMA) standards, a transformer must stay within the limits set by NEMA. The chart at the right shows the required limits at the different loads. With 100% load the transformer secondary must supply between 23 and 25 volts to meet the NEMA standard. When you buy a transformer that meets the NEMA Standard DC20-1992, you can be confident of the voltage-regulating ability. Compliance with the NEMA standard is voluntary.

Several of Honeywell transformers meet NEMA Standard DC20-1992.

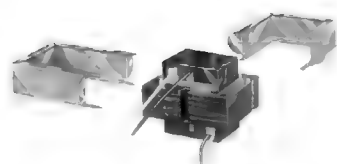
- AT20A—Type B
- AT40A—Type D
- AT72D—Type D
- AT87A—Type E

Why is the NEMA Standard important? Using a NEMA Standard transformer can prevent overcooling, brownouts and costly electronic burn-outs.



NEMA CLASS 2 TRANSFORMER BAND at 100% load, the transformer secondary must supply between 23 and 25 volts to meet the NEMA standard.

AT20; AT40 NEMA Standard Universal Stripped-Down Transformer



Output: 24 V at 19 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Approvals:

Canadian Standards Association: Certified

Underwriters Laboratories, Inc: UL Component Recognized.



Power a 24V control system; for direct mounting, or horizontal or vertical foot-mounting.

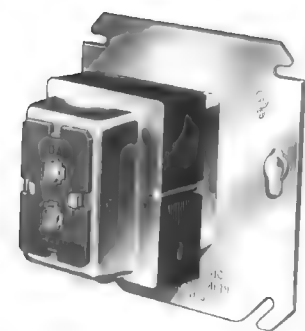
- Channel frame mounting feet and slots allow for the three mounting positions.
- Energy limiting, meet NEMA DC20-1992 Standard.
 - AT20A is marked "NEMA Type B."
 - AT40A is marked "NEMA Type D."
- Meet "NEC Class 2 not wet, Class 3 wet" and U.L. 1585 requirements.
- Mount within proper enclosure.

Electrical Connections:

Primary and Secondary	
(inch)	(mm)
9 in. color coded primary and secondary lead wires	229 mm color coded primary and secondary lead wires

	Product Number	Dimensions, Approximate		Mounting	NEMA Rating	Frequency (Hz)	Electrical Ratings	
		(inch)	(mm)				Primary Voltage	Secondary Voltage
*	AT20A1123	2 in. high, 2 1/4 in. wide, 1 7/8 in. deep	50.8 mm high, 57 mm wide, 47.6 mm deep	Channel Frame Mounting allows for Direct, Horizontal, or Vertical Foot mounting.	NEMA type B	50/60 Hz	120 V	26.5 V.O.C.
*	AT40A1121	2 3/32 in. high, 2 5/8 in. wide, 2 3/16 in. deep.	53 mm high, 67 mm wide, 56 mm deep.	Channel Frame Mounting allows for Direct, Horizontal, or Vertical Foot mounting.	NEMA type D	50/60 Hz	120 V	26.5 V.O.C.
*	AT40A1139	2 3/32 in. high, 2 5/8 in. wide, 2 3/16 in. deep.	53 mm high, 67 mm wide, 56 mm deep.	Channel Frame Mounting allows for Direct, Horizontal, or Vertical Foot mounting.	NEMA type D	50/60 Hz	240 V	26.5 V.O.C.
* TRADELINE models • SUPER TRADELINE models								

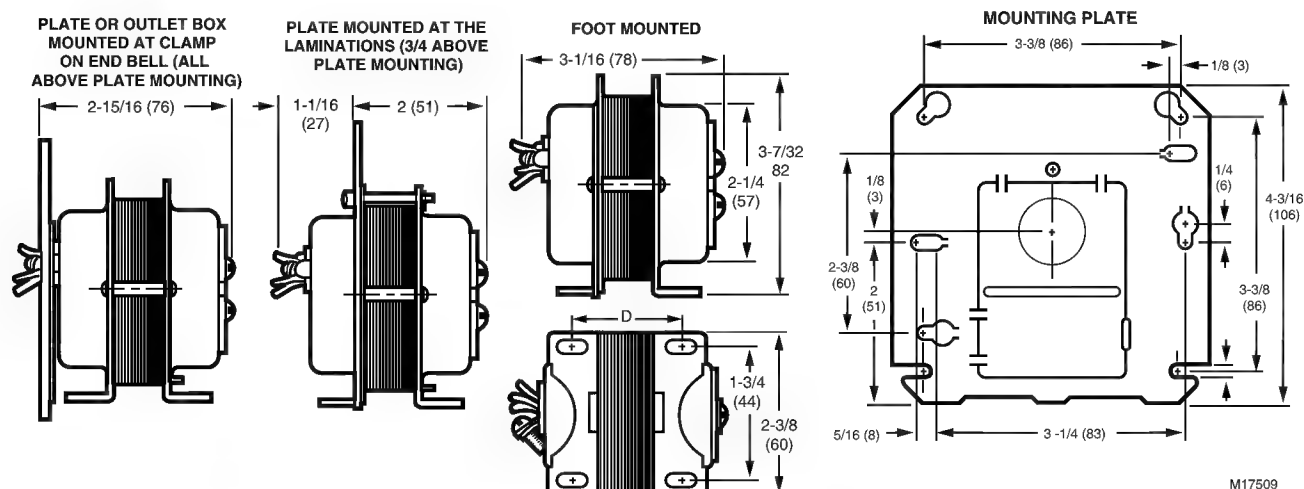
AT72 NEMA Standard Transformer



24V control circuit step-down transformer designed to power any 24V control system, including thermostats, gas valves and relays.

- Energy limiting, meets NEMA Standard DC20-1992. Transformer is marked "NEMA Type D."
- Meets "NEC Class 2 not wet, Class 3 wet" and U.L. 1585 requirements.
- Mount within proper enclosure.

Dimension Diagrams



M17509

Output: 24 V at 40 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Frequency (Hz): 50/60 Hz

NEMA Rating: NEMA type D

Electrical Connections:

Approvals:

Canadian Standards Association: Certified

N.E.C. N.E.C. Approved.

Underwriters Laboratories, Inc: UL Component Recognized.

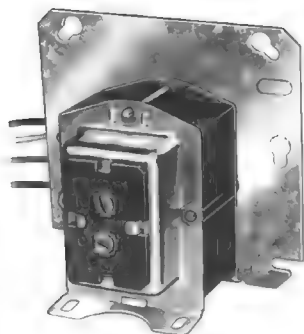
	Primary		Secondary	
	(inch)	(mm)	(inch)	(mm)
AT72D1006	9 in. lead wires	229 mm lead wires	(2) screw terminals	(2) screw terminals
AT72D1048	9 in. lead wires	229 mm lead wires	1/2 in female conduit spud w/32 in. lead wires	13 mm female conduit spud w/ 813 mm lead wires.
AT72D1089	1/2 in. male conduit spud w/ 9 in. lead wires	13 mm male conduit spud w/ 9 in. lead wires	(2) screw terminals	(2) screw terminals
AT72D1188	9 in. primary & secondary lead wires extend through plate	229 mm primary & secondary lead wires extend through plate	9 in. primary & secondary lead wires extend through plate	229 mm primary & secondary lead wires extend through plate
AT72D16XX, AT72D19XX models	9 in. lead wires	229 mm lead wires	(2) screw terminals.	(2) screw terminals

Product Number	Mounting	Electrical Ratings	
		Primary Voltage	Secondary Voltage
AT72D1006	4 x 4 in. plate-mounted, protruding into junction box.	120 V	26.5 V.O.C.
AT72D1048	4 x 4 in. plate-mounted, protruding into junction box.	120 V	26.5 V.O.C.
AT72D1089	Foot-mounted	120 V	26.5 V.O.C.
AT72D1188	4 x 4 in. plate mounted without protruding into junction box.	120 V	26.5 V.O.C.
• AT72D1683	Can be foot-mounted; plate-mounted on 4 x 4 in., 4 in. octagon, or 2 x 4 in. electrical boxes (transformer all above plate or 3/4 above plate); or clamp-mounted via a junction box knockout.	120 V	26.5 V.O.C.
* TRADELINE models • SUPER TRADELINE models			

Transformers

Product Number	Mounting	Electrical Ratings	
		Primary Voltage	Secondary Voltage
• AT72D1691	Can be foot-mounted; plate-mounted on 4 x 4 in., 4 in. octagon, or 2 x 4 in. electrical boxes (transformer all above plate or 3/4 above plate); or clamp-mounted via a junction box knockout.	208 V, 240 V w/40 VA output rating	26.5 V.O.C.
• AT72D1998	Can be foot-mounted; plate-mounted on 4 x 4 in., 4 in. octagon, or 2 x 4 in. electrical boxes (transformer all above plate or 3/4 above plate); or clamp-mounted via a junction box knockout.	120 V, 208 V, 240 V w/40 VA output rating	26.5 V.O.C.
* TRADELINE models • SUPER TRADELINE models			

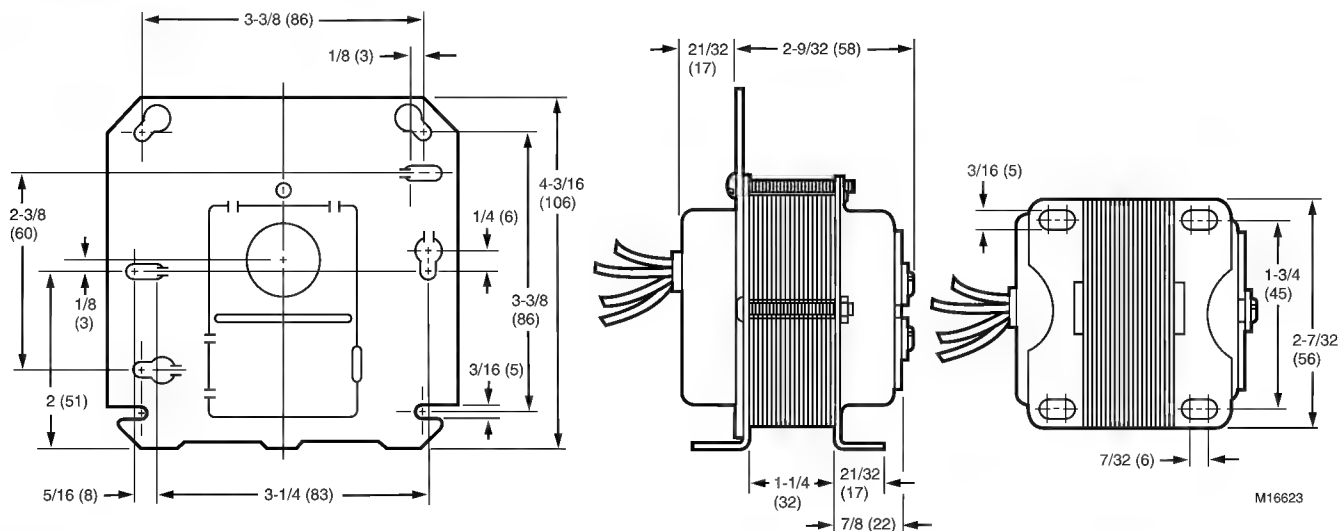
AT87 NEMA Standard Transformer



Used primarily for powering 24V air conditioning circuits. Can also be used in other applications that do not exceed the listed ratings.

- Meets "NEC Class 2 not wet, Class 3 wet" and UL 1585 requirements.
- Meets NEMA Standard DC20-1992.
- Transformer marked "NEMA Type E."
- Overload protection provided.
- Color-coded leadwires for primary connections.

Dimension Diagrams



Output: 24 V at 48 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Approvals:

Canadian Standards Association: Certified

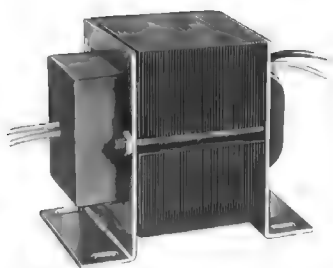
Underwriters Laboratories, Inc: UL Component Recognized.

Electrical Connections:

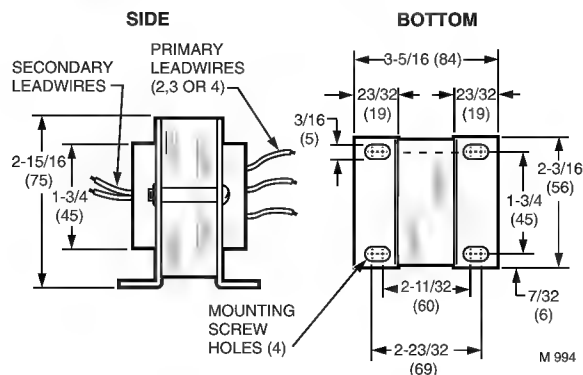
	Primary		Secondary	
	(inch)	(mm)	(inch)	(mm)
AT87A	12 in. lead wires	305 mm lead wires	12 in. leads.	305 mm lead wires
AT87A1106 (Only)	13 in. leads.	330 mm leads	(2) screw terminals.	(2) screw terminals

Product Number	Mounting	NEMA Rating	Frequency (Hz)	Electrical Ratings		Includes
				Primary Voltage	Secondary Voltage	
AT87A1049	Foot-mounted	NEMA type E	50/60 Hz	120 V	26.5 V.O.C.	Energy limiting overload protection
• AT87A1106	foot-mounted or 4 x 4 in plate	NEMA type E	50/60 Hz	120 V, 208 V, 240 V	26.5 V.O.C.	Built-in protection. Primary winding burnout.
AT87A1155	Foot-mounted	NEMA type E	50/60 Hz	480 V	26.5 V.O.C.	Energy limiting overload protection
AT87A1189	Foot-mounted	NEMA type E	50/60 Hz	277 V	26.5 V.O.C.	Energy limiting overload protection
* TRADELINE models • SUPER TRADELINE models						

AT88 Transformer



Dimension Diagram



Powers 24 Vac air conditioning circuits and other applications that do not exceed the listed ratings.

- Meets "NEC Class 2 not wet, Class 3 wet" and U.L. 1585 requirements.
- Overload protection provided.
- Color-coded leadwires for primary connections.

Output: 24 V at 75 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Approvals:

Canadian Standards Association: Certified

Underwriters Laboratories, Inc: UL Component Recognized.

Electrical Connections:

Primary		Secondary	
(inch)	(mm)	(inch)	(mm)
12 in. lead wires	305 mm lead wires	12 in. leads	305 mm lead wires

Product Number	Mounting	Frequency (Hz)	Electrical Ratings		Includes
			Primary Voltage	Secondary Voltage	
AT88A1005	Foot-mounted	50/60 Hz	120 V	26.5 V.O.C.	Internally fused secondary for overload protection.
* AT88A1021	Foot-mounted	50/60 Hz	208 V, 240 V	26.5 V.O.C.	Internally fused secondary for overload protection.
AT88A1047	Foot-mounted	50/60 Hz	480 V	26.5 V.O.C.	Internally fused secondary for overload protection.

* TRADELINE models • SUPER TRADELINE models

AT92 Transformer



Heavy duty, multitapped transformers, potted and encased in heavy sheet metal box with removable cover.

- Color-coded leadwires for quick circuit identification.
- Eight knockouts for 1/2 in. conduit are positioned for convenient installation.

Output: 17 V at 70 VA or 24 V at 100 VA

Temperature Ratings: max. ambient temp 100 F (max ambient temp. 38 C)

Approvals:

Canadian Standards Association: Certified

Electrical Connections:

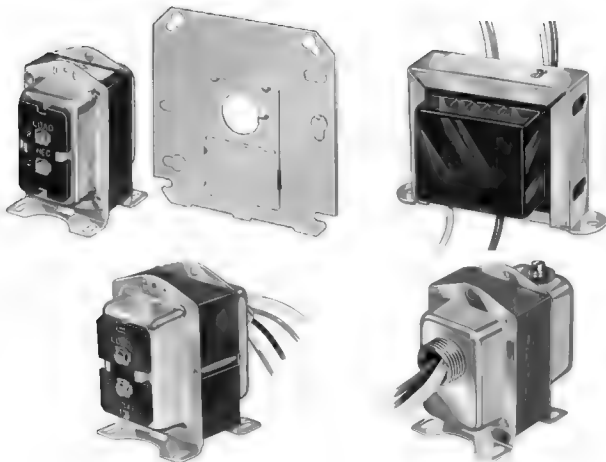
Primary		Secondary	
(inch)	(mm)	(inch)	(mm)
lead wires	lead wires	lead wires	lead wires
lead wires	lead wires	lead wires	lead wires

Product Number	Dimensions, Approximate		Mounting	Frequency (Hz)	Electrical Ratings	
	(inch)	(mm)			Primary Voltage	Secondary Voltage
AT92A1007	4 11/16 in. high, 9 11/16 in. wide, 4 13/16 in. deep	119 mm high, 246 mm wide, 122 mm deep	foot-mounted metal box w/ knockouts for 1/2 in. conduit.	60 Hz	120 V, 240 V, 480 V	24V.O.C.17
AT92C1005	4 11/16 in. high, 9 11/16 in. wide, 4 13/16 in. deep	119 mm high, 246 mm wide, 122 mm deep	foot-mounted metal box w/ knockouts for 1/2 in. conduit.	60 Hz	120 V, 240 V, 480 V	24V.O.C.17

* TRADELINE models • SUPER TRADELINE models

Transformers

AT120; AT140; AT150A,B; AT175A General Purpose Transformer



Provide power to 24 Vac circuits in heating/cooling control systems. Intended for use in systems with predictable, uniform loads. Can be used in any application that does not exceed the listed ratings.

- Meet NEC Class 2 requirements.
- Meet Underwriters Laboratories Inc. Standard UL 1585 and are identified "Class 2 not wet, Class 3 wet."

Output: 24 V at 20 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Approvals:

Canadian Standards Association: CSA Certified: A & B models.

Underwriters Laboratories, Inc: UL Listed: A,C,F models. File # E14881

Electrical Connections:

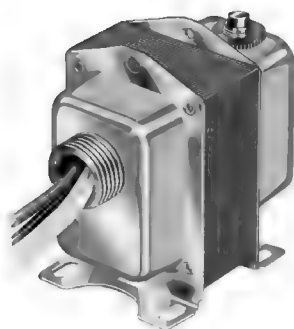
	Primary		Secondary	
	(inch)	(mm)	(inch)	(mm)
AT120A, AT140A, D, AT150A	9 in. lead wires	229 mm lead wires	(2) screw terminals	(2) screw terminals
AT140B	9 in. lead wires	229 mm lead wires	9 in. lead wires	229 mm lead wires
AT150B	9 in. lead wires w/ 1/4 in. male qc's w/plastic (2) end covers	229 mm lead wires w/ 1/4 in. male qc's w/plastic (2) end covers	9 in. lead wires w/ 1/4 in. male qc's w/plastic (2) end covers	229 mm lead wires w/ 6.4 mm male qc's w/plastic (2) end covers
AT175A	9 in. lead wires	229 mm lead wires	(2) screw terminals	(2) screw terminals

Product Number	Dimensions, Approximate		Mounting	Frequency (Hz)	Electrical Ratings		Includes
	(inch)	(mm)			Primary Voltage	Secondary Voltage	
AT120A1004	2 7/8 in. high, 1 7/8 in. wide, 2 15/16 in. deep	73 mm high, 48 mm wide, 75 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	120 V, 208 V, 240 V	27 V.O.C.	—
AT140A1000	3 3/16 in. high, 2 3/8 in. wide, 3 1/8 in. deep	81 mm high, 60 mm wide, 79 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	120 V	27 V.O.C.	Metal end bells
AT140A1018	3 3/16 in. high, 2 3/8 in. wide, 3 1/8 in. deep	81 mm high, 60 mm wide, 79 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	120 V, 208 V, 240 V	27 V.O.C.	Metal end bells
AT140A1026	3 3/16 in. high, 2 3/8 in. wide, 3 1/8 in. deep	81 mm high, 60 mm wide, 79 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	208 V, 240 V	27 V.O.C.	Metal end bells
AT140B1206	1 11/16 in. high, 3 1/2 in. wide, 1 3/4 in. deep	43 mm high, 89 mm wide, 75 mm deep	Foot-mounted	60 Hz	120 V	27 V.O.C.	available only in unit pack w/ plastic (2) end covers
AT140B1214	1 11/16 in. high, 3 1/2 in. wide, 1 3/4 in. deep	43 mm high, 89 mm wide, 75 mm deep	Foot-mounted	60 Hz	120 V, 208 V, 240 V	27 V.O.C.	available only in unit pack w/ plastic (2) end covers
AT140D1046	2 5/8 in. high, 2 1/4 in. wide, 1 15/16 in. deep	67 mm high, 57 mm wide, 49 mm deep	integral 4 x 4 in. mounting plate fits 2 x 4 in. or 4 x 4 in. outlet box.	60 Hz	120 V, 240 V	27 V.O.C.	—
AT150A1007	1 11/16 in. high, 3 3/16 in. wide, 1 3/4 in. deep	43 mm high, 81 mm wide, 75 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	120 V, 208 V, 240 V	27.5 V.O.C.	Metal end bells

* TRADELINE models • SUPER TRADELINE models

	Product Number	Dimensions, Approximate		Mounting	Frequency (Hz)	Electrical Ratings		Includes
		(inch)	(mm)			Primary Voltage	Secondary Voltage	
*	AT150B1237	1 11/16 in. high, 3 1/2 in. wide, 1 3/4 in. deep	43 mm high, 89 mm wide, 75 mm deep	Foot-mounted	60 Hz	120 V, 208 V, 240 V	27.5 V.O.C.	Plastic end caps
	AT150B1252	1 11/16 in. high, 3 1/2 in. wide, 1 3/4 in. deep	43 mm high, 89 mm wide, 75 mm deep	Foot-mounted	50/60 Hz	277 V	27.5 V.O.C.	Plastic end caps
	AT175A1008	3 3/16 in. high, 2 3/8 in. wide, 3 5/8 in. deep	81 mm high, 60 mm wide, 92 mm deep	Foot-mounted, plate-mounted on 2 x 4 in. or 4 x 4 in. outlet box, clamp-mounted using outlet box knockout, or panel-mounted	60 Hz	120 V, 208 V, 240 V	27.5 V.O.C.	Metal end bells
* TRADELINE models • SUPER TRADELINE models								

AT150F; AT175F Circuit Breaker Transformer



Provide power to 24 Vac circuits in heating/cooling control systems. Intended for use in systems with predictable, uniform loads. Can be used in any application that does not exceed the listed ratings.

- Can be used in any application that does not exceed the listed ratings.
- Meet NEC Class 2 requirements.
- Meet Underwriters Laboratories Inc. Standard UL 1585 and are identified "Class 2 not wet, Class 3 wet."

Output: 24 V at 50 VA

Temperature Ratings: -20 F to +105 F (-29 C to +41 C)

Includes: Button for manually resetting the circuit breaker and metal end bells.

Approvals:

Canadian Standards Association: Certified: File No. LR95329-18

Underwriters Laboratories, Inc: UL Listed: File no. E14881, Guide no. XOKV.

Electrical Connections:

	Primary		Secondary	
	(inch)	(mm)	(inch)	(mm)
AT150F	9 in. lead wires	229 mm lead wires	9 in. lead wires	229 mm lead wires
AT175F	9 in. lead wires w/ all lead wires through conduit screw.	229 mm lead wires w/ all lead wires through conduit screw.	9 in. lead wires w/ all leadwires through conduit screw.	229 mm leadwires w/ all leadwires through conduit screw.

	Product Number	Dimensions, Approximate		Mounting	Frequency (Hz)	Electrical Ratings	
		(inch)	(mm)			Primary Voltage	Secondary Voltage
*	AT150F1022	3 3/16 in. high, 2 3/16 in. wide, 3 5/8 in. deep	81 mm high, 56 mm wide, 93 mm deep	Includes 1/2-14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount.	60 Hz	120 V, 208 V, 240 V	27.5 V.O.C.
*	AT150F1030	3 3/16 in. high, 2 3/16 in. wide, 3 5/8 in. deep	81 mm high, 56 mm wide, 93 mm deep	Includes 1/2-14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount.	60 Hz	208 V, 277 V, 480 V	27.5 V.O.C.
*	AT175F1023	3 3/16 in. high, 2 3/16 in. wide, 3 15/16 in. deep	81 mm high, 56 mm wide, 102 mm deep	Includes 1/2-14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount.	60 Hz	120 V, 208 V, 240 V	27.5 V.O.C.
*	AT175F1031	3 3/16 in. high, 2 3/16 in. wide, 3 15/16 in. deep	81 mm high, 56 mm wide, 102 mm deep	Includes 1/2-14 NPSM conduit connector and lock nut for mounting on plate or panel (not included) with 7/8 in. knockout, and feet for surface mount.	60 Hz	208 V, 277 V, 480 V	27.5 V.O.C.
* TRADELINE models • SUPER TRADELINE models							



Water Control Products

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Water Flow Control—Thermostatic Mixing Valves

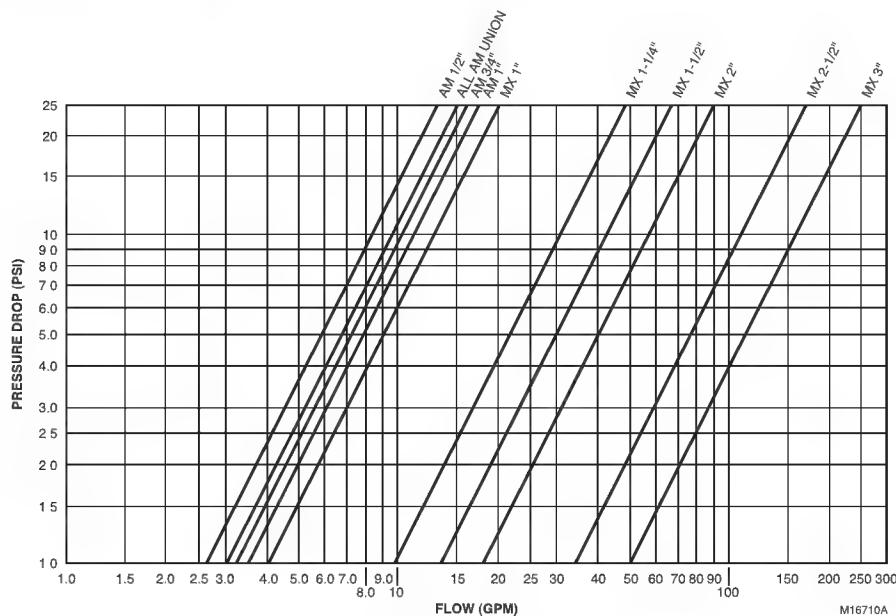
SparcoMix—AM Series; Anti-Scald, Anti-Chill Proportional Thermostatic Mixing and Diverting Valve



The Honeywell Sparcomix AM-1 series accurately adjusts, maintains and limits the hot water temperature to a desired setting selected by the user. In domestic water applications it offers anti-scald, anti-chill protection and saves money. The installation of a of a Honeywell AM-1 mixing valve on an 80 gallon hot water heater increases the usable hot water to 120 gallons by running the water heater at a higher temperature and mixing it to a safe usable temperature. In heating applications it provides comfort and protects the equipment.

- Dual purpose mixing or diverting valves.
- Constant water temperature under changing operating conditions.
- Reliable performance at minimum flow of 0.5 gpm.
- Proportional valve (simultaneous control of hot and cold water).
- Energy savings through lower supply temperatures.
- Anti-scald, anti-chill thermal shock protection.
- Temperature limit at any point.
- Nickel-plated brass/bronze construction, EPDM O-rings.
- All bronze proportioning shuttle.
- Straight through design (hot and cold at the same level).
- Max. press. 150 psi (1034 kPa), temp. 212 F (100 C).
- Designed for easy maintenance and element replacement.
- Teflon® coated to prevent mineral build-up and extend life.
- Tamper evident design.
- Valve trapping not required.

Pressure Drop Chart



Applications: Domestic water, Nursing homes, Public facilities, Automatic faucets, Radiant floor heating, Space heating, Heat pump systems, Combo systems, Solar hot water, Greenhouses, Industrial applications, Photo processing

ASSE: 1016; 1017 (100 F to 145 F, 80 F to 120 F only)

IAPMO: (80 F to 120 F, 100 F to 145 F only)

Water Flow Control—Thermostatic Mixing Valves

Product Number	Valve size	Connection Type	Operating Temperature	
			(F)	(C)
AM100-1	1/2 in.	NPT	100 F to 145 F	38 C to 63 C
AM100B-1	1/2 in.	NPT	60 F to 100 F	16 C to 38 C
AM100B-US-1	1/2 in.	Union Sweat	60 F to 100 F	16 C to 38 C
AM100B-UT-1	1/2 in.	Union NPT	60 F to 100 F	16 C to 38 C
AM100C-1	1/2 in.	NPT	80 F to 120 F	27 C to 49 C
AM100C-US-1	1/2 in.	Union Sweat	80 F to 120 F	27 C to 49 C
AM100C-UT-1	1/2 in.	Union NPT	80 F to 120 F	27 C to 49 C
AM100R-US-1	1/2 in.	Union Sweat	80 F to 180 F	27 C to 82 C
AM100R-UT-1	1/2 in.	Union NPT	80 F to 180 F	27 C to 82 C
AM100-US-1	1/2 in.	Union Sweat	100 F to 145 F	38 C to 63 C
AM100-UT-1	1/2 in.	Union NPT	60 F to 100 F	16 C to 38 C
AM101-1	3/4 in.	NPT	100 F to 145 F	38 C to 63 C
AM101B-1	3/4 in.	NPT	60 F to 100 F	16 C to 38 C
AM101B-UCPVC-1	3/4 in.	Union CPVC	60 F to 100 F	16 C to 38 C
AM101B-US-1	3/4 in.	Union Sweat	60 F to 100 F	16 C to 38 C
AM101B-UT-1	3/4 in.	Union NPT	60 F to 100 F	16 C to 38 C
AM101C-1	3/4 in.	NPT	80 F to 120 F	27 C to 49 C
AM101C-UCPVC-1	3/4 in.	Union CPVC	80 F to 120 F	27 C to 49 C
AM101C-US-1	3/4 in.	Union Sweat	80 F to 120 F	27 C to 49 C
AM101C-UT-1	3/4 in.	Union NPT	80 F to 120 F	27 C to 49 C
AM101R-US-1	3/4 in.	Union Sweat	80 F to 180 F	27 C to 82 C
AM101R-UT-1	3/4 in.	Union NPT	80 F to 180 F	27 C to 82 C
AM101-US-1	3/4 in.	Union Sweat	100 F to 145 F	38 C to 63 C
AM101-UT-1	3/4 in.	Union NPT	100 F to 145 F	38 C to 63 C
AM102-1	1 in.	NPT	100 F to 145 F	38 C to 63 C
AM102B-1	1 in.	NPT	60 F to 100 F	16 C to 38 C
AM102B-US-1	1 in.	Union Sweat	60 F to 100 F	16 C to 38 C
AM102B-UT-1	1 in.	Union NPT	60 F to 100 F	16 C to 38 C
AM102C-1	1 in.	NPT	80 F to 120 F	27 C to 49 C
AM102C-US-1	1 in.	Union Sweat	80 F to 120 F	27 C to 49 C
AM102C-UT-1	1 in.	Union NPT	80 F to 120 F	27 C to 49 C
AM102R-US-1	1 in.	Union Sweat	80 F to 180 F	27 C to 82 C
AM102R-UT-1	1 in.	Union NPT	80 F to 180 F	27 C to 82 C
AM102-US-1	1 in.	Union Sweat	100 F to 145 F	38 C to 63 C
AM102-UT-1	1 in.	Union NPT	100 F to 145 F	38 C to 63 C

Replacement Parts AM-1 Series

Product Number	Description	Includes	Operating Temperature
AM-1-020 RP	AM Series-1 B or C Range element, spring, diffuser and plug assembly	Element, spring, diffuser and plug assembly	60 F - 100 F B range 80 F - 120 F C range
AM-1-025 RP	AM Series - 1 Standard or R Range element, spring diffuser and plug assembly	Element, spring, diffuser and plug assembly	100 F - 145 F Standard range 80 F - 180 F R range
AMU200-RP	Gasket Kit for Aquamix/Sparcomix with unions 3 pcs. included.	3 pieces included	
CPVCA-075	3/4 in. NPT x CPVC adapter for NPT valves		
AMCOM-050	3/8 in. Compression Adapter for NPT Valves		

Water Flow Control—Thermostatic Mixing Valves

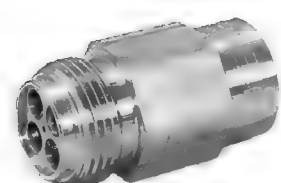
Replacement Parts AquaMix Series Old Style

OS Number	Description	Includes	Operating Temperature	
			(F)	(C)
AM100-001RP	AM Series C element, spring and plug assembly	Element, spring, diffuser and plug assembly	B Range—60 F to 100 F C Range—80 F to 120 F	B Range—16 C to 38 C C Range—27 C to 49 C
AM100-002RP	AM Series standard element, spring and plug assembly	Element, spring, diffuser and plug assembly	Standard Range —100 F - 145 F R Range—80 F - 180 F	Standard range —38 C F to 63 C R Range—27 C - 82 C
AM100-003RP	H element, spring, plug assembly	Element, spring, diffuser and plug assembly	130 F - 170 F	
AM100-009RP	AM Series B Element, spring and plug assembly			
AM100-010RP	AM Series R element, spring and plug assembly			

Replacement Parts SM Series Old Style

OS Number	Description	Includes	Used With
SM100-004RP	SM Series Element, spring and shuttle assembly	Element, spring, diffuser and plug assembly	

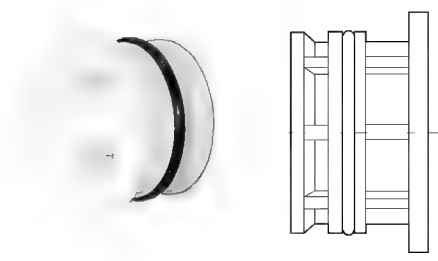
Check-Adapter™-Check Valves



Check-Adapter™ For NPT SparcoMix valves without unions or other spring check applications requiring low cracking pressure. Spring check built into sweat adapter. Materials: Brass/Stainless, soft seat.

Product Number	Capacity (Cv)	Description
CA-050	2.4	Check Adapter 1/2 in. sweat x 1/2 in. NPT Male Soft seat
CA-075	3.6	Check Adapter 3/4 in. sweat x 3/4 in. NPT Male Soft seat

Union-Check™—Check Valves



UNION-CHECK™ Check Valves for union mixing valves.

Material: Plastic/stainless spring, soft seat.

Capacity: Cv 8

Description: Fits 1/2 in., 3/4 in., and 1 in. SparcoMix Valves with unions.

ORDER NUMBER	Description
AMCU100	Check valve for AM-1 Series union valves.

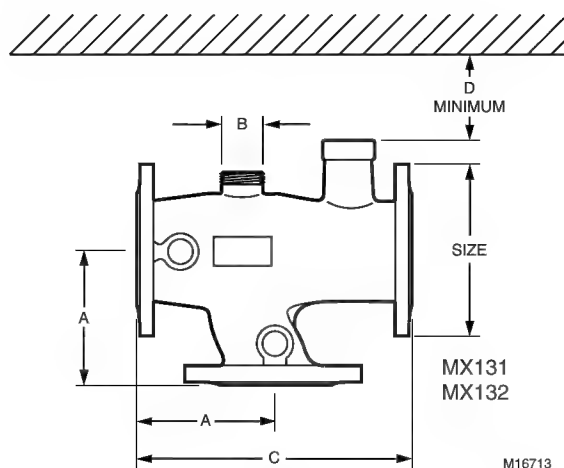
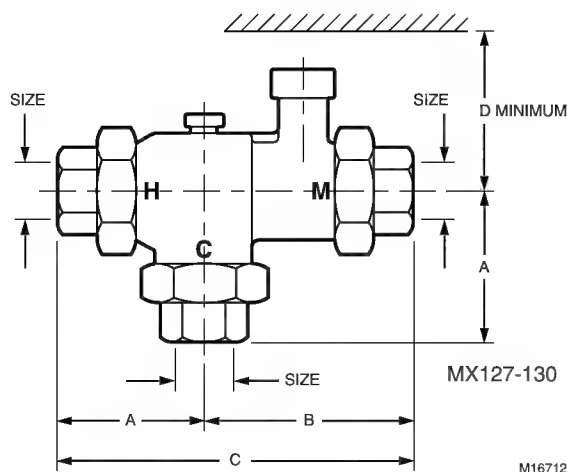
Water Flow Control—Thermostatic Mixing Valves

SparcoMatic™ Large Flow Proportional Mixing or Diverting Valve. Protects People and Equipment, Saves Energy



The SparcoMatic is a state-of-the-art mixing valve with Teflon wear surfaces to prevent calcium buildup. Valve controls hot and cold supply based on control setting. If cold water is shut off, the valve will reduce the mixed flow rate in seconds (speed/residual flow rate varies by size). Accurate control of temperature provides energy savings, increased comfort and safety for the user.

- Dual purpose mixing or diverting valve.
- Constant water temperature under different operating conditions.
- Proportional valve (control of hot and cold water)
- Flow reduction in seconds if cold water supply is interrupted.
- Maintains temperature with extremely low minimum flows.
- Temperature adjustable, tamper evident.
- Install in any position, heat trapping not required.
- Recirculation connection for fast response.
- Bronze/stainless construction.
- Wear surfaces teflon coated to prevent lime deposits.
- Union/tailpiece connections included.
- Tapped flange connections 2-1/2 in. and 3 in.
- Allen wrench for temperature adjustment included.



Valve	Dimensions (in.)							
	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
MX127	2-13/16	71	3-11/16	94	6-1/2	165	6	152
MX128	3-5/16	84	4-13/32	112	7-11/16	196	6-29/32	175
MX129	3-19/32	91	5	127	8-19/32	218	7	178
MX130	4-3/16	107	5-13/16	147	10	254	7-5/16	185
MX131	5-11/16	145	1	25	11-13/32	299	4	102
MX132	6-3/32	155	1-1/4	32	12-3/16	309		
MX127C	2-13/16	71	3-11/16	94	6-1/2	165	6	152
MX128C	3-5/16	84	4-13/32	112	7-11/16	196	6-29/32	175
MX129C	3-19/32	91	5	127	8-19/32	218	7	178
MX130C	4-3/16	107	5-13/16	147	10	254	7-5/16	185

Applications: Any application requiring accurate control of hot water temperature based on the mixing of hot and cold water, such as: domestic water for homes, apartment, hotels, schools, nursing homes, offices, public facilities, space heating, radiant floor heating,
ASSE: 1017 (1 inch through 2 inch only)

Water Flow Control—Thermostatic Mixing Valves

Product Number	Valve size	Connection Type	Operating Temperature		Weight	
			(F)	(C)	lb	kg
MX127	1 in.	NPT	110 F to 150 F		3.6 lb	1.6
MX127C	1 in.	NPT	90 F to 120 F		3.7 lb	1.68
MX128	1 1/4 in.	NPT	110 F to 150 F		6.4 lb	2.9
MX128C	1 1/2 in.	NPT	90 F to 120 F		6.5 lb	3.0
MX129	1 1/2 in.	NPT	90 F to 120 F		8.4 lb	3.8
MX129C	1 1/2 in.	NPT	90 F to 120 F		8.5 lb	3.9
MX130	2 in.	NPT	110 F to 150 F		13.1 lb	5.9
MX130C	2 in.	NPT	90 F to 120 F		13.2 lb	6.0
MX131	2 1/2 in.	Flanged	110 F to 150 F		51 lb	23.2
MX132	3 in.	Flanged	110 F to 150 F		62 lb	28.2

Sparcomatic Replacement Gasket Kits

For MX Series Valves

Product Number	Valve size	Description	Includes
MX050-RP	1/2 in.	1/2 in. Recirculation Adapter	1 piece included
MX150-RP	1 1/2 in.	1 1/2 in. Gasket Kit	3 pieces included
MX200-RP	2 in.	2 in. Gasket Kit	3 pieces included
MX250-RP	2 1/2 in.	2 1/2 in. Gasket Kit	3 pieces included
MX300-RP	3 in.	3 in. Gasket Kit	3 pieces included
MX100-RP	1 in.	1 in. Gasket Kit	3 pieces included
MX125-RP	1 1/4 in.	1 1/4 in. Gasket Kit	3 pieces included

Water Flow Control—Thermostatic Mixing Valves

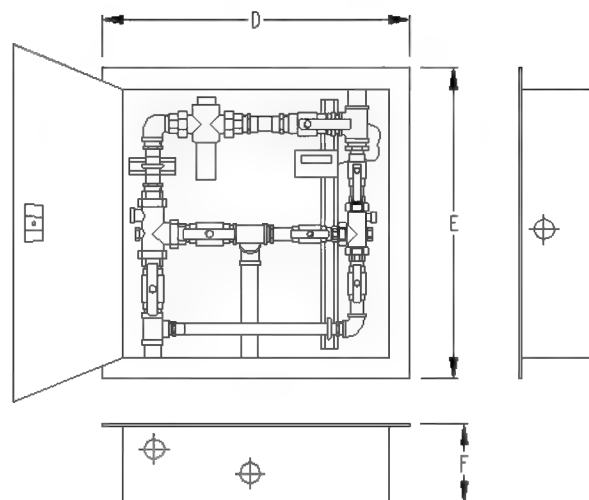
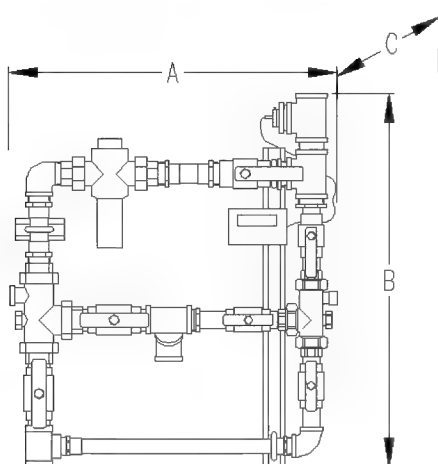
High-Low Temperature Control System



Honeywell HL Series™ High-Low Temperature Control System is pre-engineered, assembled and tested for quality and dependability to provide protection from excessive hot water temperatures. Our systems incorporate ASSE 1017 tested and certified thermostatic mixing valves and components for accurate temperature control.

INTELLIGRATION-Honeywell's "integrated solution" for hot water control

- Dialset™ Pressure regulating Valve monitors demand to control hot water temperature ASSE 1003.
- Constant water temperature under low through high capacity demand periods.
- Proportional valve (control of hot and cold water.)
- Flow reduction in seconds if cold water supply is interrupted.
- Allen wrenches included for adjustment of temperature setting.
- Union tailpieces on both mixing valves for ease of maintenance.
- Install in any position, heat trapping not required.
- Bronze / stainless steel construction for both mixing valves.
- Wear surfaces on both mixing valves are Teflon™ coated to prevent mineral deposits.
- Recirculation connection in small mixing valve for fast response.
- Maximum pressure differentials between hot and cold ports 7 Psi.
- Mixing valves are ASSE 1017 tested and certified.
- Maximum inlet temperature 200 F (93 C).
- Maximum inlet pressure 150 Psig
- Minimum temperature difference between hot and mix should be 10 F (6 C).



HL 150, 200 & 250 CABINET OPTION

Dimensions

Product Number	A	B	C	D	E	F
HL150	30 in.	36 in.	8 in.	34 in.	40 in.	10 in.
HL200	38 in.	44 in.	9 in.	44 in.	48 in.	10 in.
HL250	40 in.	44 in.	9 in.	44 in.	48 in.	10 in.

Applications: Mixing of hot and cold water to produce tempered water for industrial or commercial applications requiring accurate control of domestic hot water temperature during all capacity flow rates from low to high.

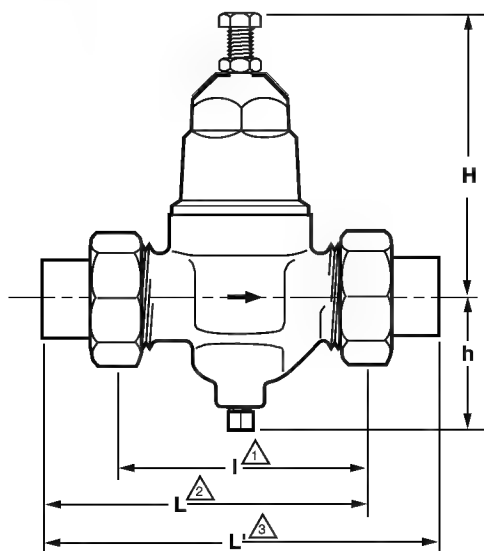
ORDER NUMBER	Port Size		Minimum Flow	Connection Type	Flow vs. Pressure Drop					Weight	
					System Differential Pressure						
	Inlet	Outlet			5 psi	10 psi	15 psi	20 psi	30 psi	(lb)	(kg)
HL150	1 1/4 in.	1 1/2 in.	1.0 gpm	NPT	18 gpm	30 gpm	38 gpm	44 gpm	57 gpm	58 lb	26.4 kg
HL200	2 in.	2 in.	1.0 gpm	NPT	24 gpm	40 gpm	54 gpm	68 gpm	84 gpm	80 lb	36.4 kg
HL250	2 in.	2 1-2 in.	3.5 gpm	NPT	40 gpm	70 gpm	96 gpm	120 gpm	150 gpm	105 lb	47.7 kg

Water Flow Control—Pressure Regulating Valves

D05A,D,G Pressure Regulating Valves



Valves for new residential and light commercial construction, drip irrigation, and other applications requiring highly sensitive and accurate regulation.
Dimension Diagrams



SIZE (INCHES)	H	h ⁴	I ¹
1/2	4-9/16 (116)	2-1/16 (52)	3-3/16 (81)
3/4	4-9/16 (116)	2-1/16 (52)	3-1/2 (89)
1	6 (152)	2-5/8 (66)	3-15/16 (100)
1-1/4	6 (152)	2-5/8 (66)	4-11/16 (119)

SIZE (INCHES)	SWEAT TAILPIECE		THREADED TAILPIECE	
	L ²	L' ³	L ²	L' ³
1/2	3-7/8 (98)	4-5/8 (118)	4-1/16 (103)	4-15/16 (126)
3/4	4-5/16 (110)	5-3/16 (132)	4-5/16 (110)	5-3/16 (132)
1	5-1/4 (133)	6-1/2 (166)	5 (127)	6-1/16 (154)
1-1/4	6-3/16 (157)	7-11/16 (195)	6 (152)	7-5/16 (185)

¹ NON-UNION MODEL.

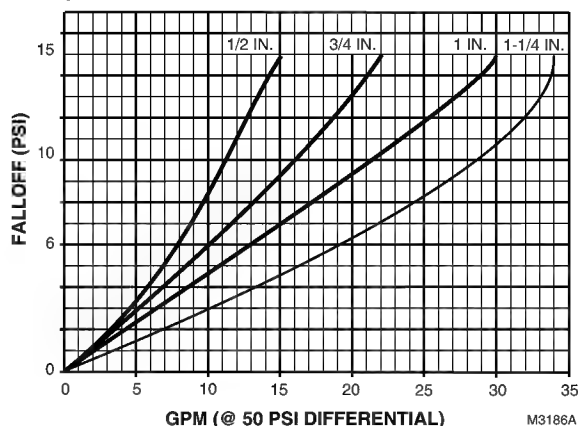
³ DOUBLE-UNION MODEL.

² SINGLE-UNION MODEL.

⁴ DIMENSIONS WITH GAUGE PLUG.

M764B

D05 capacities.



Calibrated Adjustment Dial: No

Materials: Bronze (body), Fabric reinforced diaphragm, Stainless steel and engineered thermoplastics.

Maximum Inlet Pressure Rating: 400 psi

Reducing Ratio: 10:1 maximum

WATER CAPACITIES

The suitability of a given regulator size depends upon the pressure requirements of the installation. To determine the pressure regulator valve size required for a specific installation, calculate:

1. Pressure differential between inlet and outlet pressure in pounds per square inch (psi).
2. Capacity in gallons per minute (gpm), and
3. Allowable reduced pressure fall-off in psi.

Given these variables, use the table above to determine proper pressure regulator valve size for your application.

Example: An installation has 135 psi inlet pressure, 60 psi outlet pressure (75 psi pressure differential). It requires 30 gpm capacity and allows only 10 psi fall-off. A 1-1/4 in. D05 is required. This pressure regulator valve allows flow capacity up to 34 gpm with a 10 psi fall-off. The outlet pressure at full flow capacity of 30 gpm would be about 52 psi. The no flow pressure would be 60 psi.

Temperature Range: 180 F (82 C)

Approvals

ASSE: Certified (1003)

IAPMO: Listed

Canadian Standards Association: Certified: Standard B356.

Water Flow Control—Pressure Regulating Valves

Product Number	Valve size	Pipe Connections	Dimensions, Approximate		Outlet Pressure Adjustment Range	Gauge Tap
			(inch)	(mm)		
D05A1098	1/2 in.	Thread by thread, unions available as accessories	6 5/8 in. high, 3 3/16 in. long	168 mm high, 81 mm long	15-150	None
D05A1106	3/4 in.	Thread by thread, unions available as accessories	6 5/8 in. high, 3 1/2 in. long	168 mm high, 89 mm long	15-150	None
D05A1114	1 in.	Thread by thread, unions available as accessories	8 5/8 in. high, 3 15/16 in. long	218 mm high, 100 mm long	15-150	None
D05A1122	1/2 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 1/16 in. long	168 mm high, 103 mm long	15-150	None
D05A1130	3/4 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	168 mm high, 110 mm long	15-150	None
D05A1148	1 in.	Single union, internally threaded tailpiece, second union available as accessories	8 5/8 in. high, 5 in. long	218 mm high, 127 mm long	15-150	None
D05A1155	1/2 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 3 7/8 in. long	168 mm high, 98 mm long	15-150	None
D05A1163	3/4 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	168 mm high, 110 mm long	15-150	None
D05A1171	1 in.	Single union, sweat tailpiece, second union available as accessories	8 5/8 in. high, 5 1/4 in. long	218 mm high, 133 mm long	15-150	None
D05D1001	3/4 in.	Double-union, internally threaded tailpieces	6 5/8 in. high, 5 3/16 in. long	168 mm high, 132 mm long	15-150	None
D05D1019	3/4 in.	Double-union, sweat tailpieces	8 5/8 in. high, 6 1/16 in. long	218 mm high, 154 mm long	15-150	None
D05D1027	1 in.	Double-union, internally threaded tailpieces	6 5/8 in. high, 5 3/16 in. long	168 mm high, 132 mm long	15-150	None
D05D1035	1 in.	Double-union, sweat tailpieces	8 5/8 in. high, 6 1/2 in. long	218 mm high, 166 mm long	15-150	None
D05D1043	1 1/4 in.	Double-union, sweat tailpieces	8 5/8 in. high, 5 1/4 in. long	218 mm high, 152 mm long	15-130	None
D05G1004	1/2 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 1/16 in. long	6 5/8 in. high, 4 1/16 in. long	15-150	1/4 in. NPT
D05G1012	3/4 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	6 5/8 in. high, 4 5/16 in. long	15-150	1/4 in. NPT
D05G1020	1 in.	Single union, internally threaded tailpiece, second union available as accessories	8 5/8 in. high, 5 in. long	218 mm high, 127 mm long	15-150	1/4 in. NPT
D05G1038	1/2 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 3 7/8 in. long	168 mm high, 98 mm long	15-150	1/4 in. NPT
D05G1046	3/4 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	168 mm high, 110 mm long	15-150	1/4 in. NPT
D05G1053	1 in.	Single union, sweat tailpiece, second union available as accessories	8 5/8 in. high, 5 1/4 in. long	218 mm high, 133 mm long	15-150	1/4 in. NPT
D05G1061	1 1/4 in.	Single union, internally threaded tailpiece, second union available as accessories	8 5/8 in. high, 6 in. long	8 5/8 in. high, 6 in. long	15-130	1/4 in. NPT
D05G1079	1 1/4 in.	Single union, sweat tailpiece, second union available as accessories	8 5/8 in. high, 5 1/4 in. long	8 5/8 in. high, 5 1/4 in. long	15-130	1/4 in. NPT

Water Flow Control—Pressure Regulating Valves

D05T Pressure Regulating Valve—Compact Design



Valves for new residential drip irrigation, and other applications requiring highly sensitive and accurate regulation.

- Flow capacity and accuracy make the D05 suitable for a variety of applications.
- Bronze body with stainless steel and engineered thermoplastic internal parts.
- Non-corroding unitized cartridge contains all working parts and is easily replaceable.
- Fully balanced regulator mechanism with fabric reinforced diaphragm.
- Include balanced single seat for accurate pressure output under varying inlet pressures.
- Inlet and outlet are internally threaded female NPT, and externally threaded for use with union assemblies. Include built-in strainer and thermal bypass.
- One model can be used in low, standard or high pressure applications. Gauge tapped models available.

Calibrated Adjustment Dial: No

Gauge Tap: None

Materials: Bronze (body), Fabric reinforced diaphragm, Stainless steel and engineered thermoplastics.

Maximum Inlet Pressure Rating: 400 psi

Reducing Ratio: 10:1 maximum

Temperature Range: 180 F (82 C)

Approvals

ASSE: Certified (1003)

IAPMO: Listed

Canadian Standards Association : Certified: Standard B356.

Product Number	Valve size	Pipe Connections	Dimensions, Approximate		Outlet Pressure Adjustment Range
			(inch)	(mm)	
D05T1011	3/4 in.	Female NPT threaded inlet and outlet, No Union	4 1/2 inch high, 3 3/8 in. long	114 mm high, 86 mm long	15-75
D05T1029	3/4 in.	Double-union, sweat tailpieces	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75
D05T1045	1 in.	Female NPT threaded inlet and outlet, No Union	4 1/2 inch high, 4 in. long	114 mm high, 102 mm long	15-75
D05T1052	1 in.	Double-union, sweat tailpieces	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75
D05T1060	3/4 in.	Double-union, internally threaded (female NPT) tailpieces	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75
D05T1078	1 in.	Double-union, internally threaded (female NPT) tailpieces	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75
D05T1086	3/4 in.	Single union, sweat tailpiece	4 1/2 inch high, 4 1/4 in. long	114 mm high, 108 mm long	15-75
D05T1094	3/4 in.	Single union, internally threaded tailpiece	4 1/2 inch high, 4 1/4 in. long	114 mm high, 108 mm long	15-75
D05T1102	1 in.	Single union, sweat tailpiece	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75
D05T1110	1 in.	Single union, internally threaded tailpiece	4 1/2 inch high, 5 1/8 in. long	114 mm high, 142 mm long	15-75

Water Flow Control—Pressure Regulating Valves

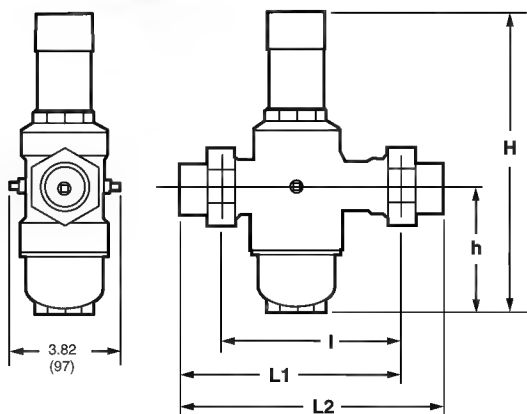
D06 Pressure Regulating Valves



High quality pressure regulating valve that maintains a constant outlet pressure over a wide range of inlet supply pressures.

- Ideally suited for potable water and irrigation applications requiring accurate regulation.
- Wide outlet pressure range, high inlet pressure, and compact design allow flexibility in installation and application.
- Non-corroding unitized cartridge contains all working parts and is easily replaceable.
- Includes built-in strainer and thermal bypass.
- Balanced seat construction provides superior pressure regulation. Gauge tapped.

Dimension Diagrams



DIMENSIONS IN IN. (MM)				THREADED		SWEAT	
SIZE	H	h	I	L1	L2	L1	L2
1-1/2	11-13/16 (299)	5 (126)	6-3/8 (163)	7-13/16 (198)	9-3/16 (234)	7-7/8 (201)	9-3/8 (239)
2	11-13/16 (299)	5 (126)	6-3/8 (163)	7-7/8 (200)	9-5/16 (237)	8-5/16 (211)	10-3/16 (259)

M11203

Calibrated Adjustment Dial: No

Gauge Tap: 1/4 in. NPT (two, one on each side of body).

Materials: Bronze (body), Fabric reinforced diaphragm, Stainless steel and engineered thermoplastics.

Maximum Inlet Pressure Rating: 400 psi

Reducing Ratio: 10:1 maximum

Temperature Range: 180 F (82 C)

Approvals

ASSE: Certified (1003)

IAPMO: Listed

Canadian Standards Association: Certified: Standard B356.

Water Capacities

The suitability of a given regulator size depends upon the pressure requirements of the installation. To determine the pressure regulator valve size required for a specific installation, calculate:

1. Pressure differential between inlet and outlet pressure in pounds per square inch (psi).
2. Capacity in gallons per minute (gpm), and
3. Allowable reduced pressure fall-off in psi.

Given these variables, use table below to determine proper pressure regulator valve size for your application.

Example: An installation has 135 psi inlet pressure, 60 psi outlet pressure (75 psi pressure differential). It requires 40 gpm capacity and allows only 10 psi fall-off. A 1-1/2 in. D06G is required. This pressure regulator valve allows a flow capacity up to 46 gpm with a 10 psi fall-off.

Size (in.)	Reduced Pressure Fall-Off (psi)	Pressure Differential Between Inlet and Outlet—No Flow							
		25 psi		50 psi		75 psi		100 psi	
		Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)
1-1/2	6	13	2.0	15	2.4	17	2.7	21	3.3
	10	36	5.7	43	6.8	46	7.2	54	8.5
	15	65	10.2	76	12.0	84	13.2	96	15.1
	20	88	13.9	102	16.1	114	18.0	132	20.8
2	6	15	1.4	18	1.7	22	2.1	27	2.6
	10	41	3.9	49	4.7	57	5.4	66	6.3
	15	75	7.2	88	8.4	101	9.7	114	10.9
	20	104	9.9	124	11.9	141	13.5	163	15.6

Product Number	Valve size	Pipe Connections	Dimensions, Approximate		Outlet Pressure Adjustment Range
			(inch)	(mm)	
D06G1003	1 1/2 in.	Single union, internally threaded tailpiece, second union available as accessories	11 13/16 in. high, 13 7/8 in. long	299 mm high, 198 mm long	15-130
D06G1011	1 1/2 in.	Single union, sweat tailpiece, second union available as accessories	11 13/16 in. high, 7 7/8 in. long	299 mm high, 200 mm long	15-130
D06G1029	2 in.	Single union, internally threaded tailpiece, second union available as accessories	11 13/16 in. high, 7 7/8 in. long	299 mm high, 200 mm long	15-130
D06G1037	2 in.	Single union, sweat tailpiece, second union available as accessories	11 13/16 in. high, 8 5/16 in. long	299 mm high, 211 mm long	15-130

Water Flow Control—Pressure Regulating Valves

DS05 “DialSet®” Pressure Regulating Valves

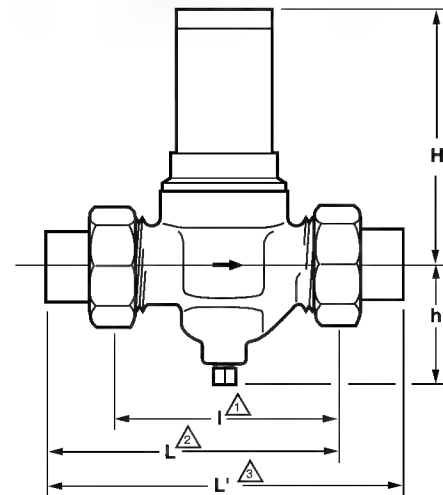
Valves for new residential and light commercial construction, drip irrigation, and other applications requiring highly sensitive and accurate regulation.

Easy “DialSet” Adjustment (no gauge required)

- Dial is calibrated in 10 psi increments to allow quick and accurate adjustment of outlet pressure.
- Flow capacity and accuracy make the DS05 suitable for potable water service and most irrigation applications.
- Full range outlet adjustment from 15 psi to 150 psi (130 psi for 1 1/4 in.).
- High pressure (400 psi) inlet rating.
- Non-corroding unitized cartridge contains all working parts and is easily replaceable.
- Bronze body with stainless steel and engineered thermoplastic internal parts. Balanced single seat for accurate pressure output under varying inlet pressures.
- Inlet and outlet are internally threaded female NPT, and externally threaded for use with union assemblies.
- Built-in strainer and thermal bypass.
- One model can be used in low, standard or high pressure applications.
- Gauge tap included on all models.



Dimension Diagrams



SIZE (INCHES)	H	h ¹	L ¹
1/2	4-5/16 (110)	2-1/16 (52)	3-3/16 (81)
3/4	4-5/16 (110)	2-1/16 (52)	3-1/2 (89)
1	5-9/16 (141)	2-5/8 (66)	3-15/16 (100)
1-1/4	5-9/16 (141)	2-5/8 (66)	4-11/16 (119)

SIZE (INCHES)	SWEAT TAILPIECE		THREADED TAILPIECE	
	L ²	L' ³	L ²	L' ³
1/2	3-7/8 (99)	4-5/8 (118)	4-1/16 (103)	4-15/16 (126)
3/4	4-5/16 (110)	5-3/16 (132)	4-5/16 (110)	5-3/16 (132)
1	5-1/4 (133)	6-1/2 (166)	5 (127)	6-1/16 (154)
1-1/4	6-3/16 (157)	7-11/16 (195)	6 (152)	7-5/16 (185)

- ¹ NON-UNION MODEL CONFIGURATION.
² SINGLE-UNION MODEL CONFIGURATION.
³ DOUBLE-UNION MODEL CONFIGURATION.
⁴ DIMENSION WITH GAUGE PLUG.

M3625A

Capacity and Velocity Ratings:

Pressure Regulator Valve Size	Reduced Pressure Fall-Off (psi)	Pressure Differential between inlet and outlet							
		25 psi		50 psi		75 psi		100 psi or more	
		Capacity gpm	Velocity ^a ft/sec	Capacity gpm	Velocity ^a ft/sec	Capacity gpm	Velocity ^a ft/sec	Capacity gpm	Velocity ^a ft/sec
1/2 in.	6	7.0	7.3	8.0	8.3	9.0	9.4	10.0	10.4
	10	10.0	10.4	11.0	11.5	12.0	12.5	13.0	13.5
	15	13.0	13.5	15.0	15.6	16.0	16.7	17.0	17.7
3/4 in.	6	9.0	5.4	10.0	6.0	11.0	6.5	12.0	7.1
	10	15.0	8.9	16.0	9.5	17.0	10.0	18.0	10.7
	15	20.0	11.9	22.0	13.7	23.0	13.7	24.0	14.3
1 in.	6	11.5	4.2	13.0	4.7	14.5	5.3	16.0	5.8
	10	20.0	7.2	21.5	7.8	23.0	8.3	24.5	8.9
	15	28.0	10.7	30.0	10.9	33.0	12.0	35.0	12.7
1-1/4 in.	6	13.5	2.9	16.0	3.4	20.0	4.3	22.0	4.7
	10	22.0	4.7	29.0	6.2	34.0	7.3	38.0	8.1
	15	37.0	7.9	56.0	12.0	62.5	13.4	73.0	15.6

^a Velocity for flow of water varies according to use; Recommended velocity for flow of water: Residential: Use 5-10 ft/sec. Industrial: Use 7-15 ft/sec. General: Use 5-10 ft/sec. Boiler Feed: 7-15 ft/sec.

Water Flow Control—Pressure Regulating Valves

Calibrated Adjustment Dial: Yes

Gauge Tap: 1/4 in. NPT

Materials: Bronze (body), Fabric reinforced diaphragm, Stainless steel and engineered thermoplastics.

Maximum Inlet Pressure Rating: 400 psi

Reducing Ratio: 10:1 maximum

Temperature Range: 180 F (82 C)

Approvals

ASSE: Certified (1003)

IAPMO: Listed

Canadian Standards Association: Certified: Standard B356.

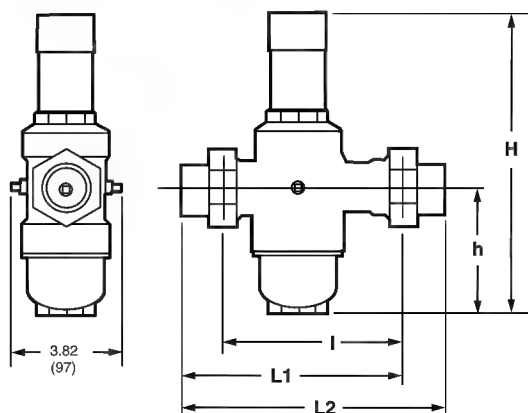
Product Number	Valve size	Pipe Connections	Dimensions, Approximate		Outlet Pressure Adjustment Range	Description
			(inch)	(mm)		
DS05G1002	1/2 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 1/16 in. long	168 mm high, 103 mm long	15-150	Threaded 1/2 in. Pressure regulator Valve
DS05G1010	3/4 in.	Single union, internally threaded tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	168 mm high, 110 mm long	15-150	Threaded 3/4 in. Pressure regulator Valve
DS05G1028	1 in.	Single union, internally threaded tailpiece, second union available as accessories	8 5/8 in. high, 5 in. long	218 mm high, 127 mm long	15-150	Threaded 1 in. Pressure regulator Valve
DS05G1044	1/2 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 3 7/8 in. long	168 mm high, 98 mm long	15-150	Sweat 1/2 in. Pressure regulator Valve
DS05G1051	3/4 in.	Single union, sweat tailpiece, second union available as accessories	6 5/8 in. high, 4 5/16 in. long	168 mm high, 110 mm long	15-150	Sweat 3/4 in. Pressure regulator Valve
DS05G1069	1 in.	Single union, sweat tailpiece, second union available as accessories	8 5/8 in. high, 5 1/4 in. long	218 mm high, 133 mm long	15-150	Sweat 1 in. Pressure regulator Valve
DS05G1085	1 1/4 in.	Single union, internally threaded tailpiece, second union available as accessories	8 5/8 in. high, 6 in. long	218 mm high, 152 mm long	15-130	Threaded 1 1/4 in. Pressure regulator Valve
DS05G1093	1 1/4 in.	Single union, sweat tailpiece, second union available as accessories	8 5/8 in. high, 5 1/4 in. long	218 mm high, 133 mm long	15-130	Sweat 1 1/4 in. Pressure regulator Valve

Water Flow Control—Pressure Regulating Valves

DS06 “DialSet®” Pressure Regulating Valves



Dimension Diagrams



DIMENSIONS IN IN. (MM)				THREADED		SWEAT	
SIZE	H	h	I	L1	L2	L1	L2
1-1/2	11-13/16 (299)	5 (126)	6-3/8 (163)	7-13/16 (198)	9-3/16 (234)	7-7/8 (201)	9-3/8 (239)
2	11-13/16 (299)	5 (126)	6-3/8 (163)	7-7/8 (200)	9-5/16 (237)	8-5/16 (211)	10-3/16 (259)

M11203

High quality pressure regulating valve that maintains a constant outlet pressure over a wide range of inlet supply pressures. Includes calibrated outlet pressure set dial that allows outlet pressure adjustments without the use of a gauge in most applications.

Easy “DialSet” Adjustment (no gauge required)

- Ideally suited for potable water and irrigation applications requiring accurate regulation.
- Wide outlet pressure range, high inlet pressure, and compact design allow flexibility in installation and application.
- Non-corroding unitized cartridge contains all working parts and is easily replaceable.
- Includes built-in strainer and thermal bypass.
- Balanced seat construction provides superior pressure regulation.
- Gauge tapped.

WATER CAPACITIES

The suitability of a given regulator size depends upon the pressure requirements of the installation. To determine the pressure regulator valve size required for a specific installation, calculate:

1. Pressure differential between inlet and outlet pressure in pounds per square inch (psi).
2. Capacity in gallons per minute (gpm), and
3. Allowable reduced pressure fall-off in psi.

Given these variables, use table above to determine proper pressure regulator valve size for your application.

Example: An installation has 135 psi inlet pressure, 60 psi outlet pressure (75 psi pressure differential). It requires 40 gpm capacity and allows only 10 psi fall-off. A 1-1/2 in. DS06G is required. This pressure regulator valve allows a flow capacity up to 46 gpm with a 10 psi fall-off.

Size (in.)	Reduced Pressure Fall-Off (psi)	Pressure Differential Between Inlet and Outlet—No Flow							
		25 psi		50 psi		75 psi		100 psi	
		Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)	Flow Capacity (US gpm)	Velocity (ft/sec)
1-1/2	6	13	2.0	15	2.4	17	2.7	21	3.3
	10	36	5.7	43	6.8	46	7.2	54	8.5
	15	65	10.2	76	12.0	84	13.2	96	15.1
	20	88	13.9	102	16.1	114	18.0	132	20.8
2	6	15	1.4	18	1.7	22	2.1	27	2.6
	10	41	3.9	49	4.7	57	5.4	66	6.3
	15	75	7.2	88	8.4	101	9.7	114	10.9
	20	104	9.9	124	11.9	141	13.5	163	15.6

Calibrated Adjustment Dial: Yes

Gauge Tap: 1/4 in. NPT (two, one on each side of body).

Materials: Bronze (body), Fabric reinforced diaphragm, Stainless steel and engineered thermoplastics.

Maximum Inlet Pressure Rating: 400 psi

Reducing Ratio: 10:1 maximum

Temperature Range: 180 F (82 C)

Approvals

ASSE: Certified (1003)

IAPMO: Listed

Canadian Standards Association: Certified: Standard B356.

Water Flow Control—Pressure Regulating Valves

Product Number	Valve size	Pipe Connections	Dimensions, Approximate		Outlet Pressure Adjustment Range
			(inch)	(mm)	
DS06G1000	1 1/2 in.	Single union, internally threaded tailpiece, second union available as accessories	11 13/16 in. high, 13 7/8 in. long	299 mm high, 198 mm long	15-130
DS06G1018	1 1/2 in.	Single union, sweat tailpiece, second union available as accessories	11 13/16 in. high, 7 7/8 in. long	299 mm high, 201 mm long	15-130
DS06G1026	2 in.	Single union, internally threaded tailpiece, second union available as accessories	11 13/16 in. high, 7 7/8 in. long	299 mm high, 200 mm long	15-130
DS06G1034	2 in.	Single union, sweat tailpiece, second union available as accessories	11 13/16 in. high, 8 5/16 in. long	299 mm high, 211 mm long	15-130

Repair Kit

Product Number	Valve size	Includes	Description
K05A1009	1/2 in./3/4 in.	Cartridge, Screen, O-rings	Repair Kit for D05 Series 1/2 in. and 3/4 in.
K05A1017	1 in./1 1/4 in.	Cartridge, Screen, O-rings	Repair Kit for D05 and DS05 Series 1 in. and 1 1/4 in.
K05A1025	3/4 in., 1 in.	Cartridge, screen, O-ring	Repair kit for D05T 1/2 inch, 3/4 inch and 1 inch valves
K05B1007	1/2 in./3/4 in.	Screen, O-rings	Repair Kit for D05 and DS05 Series 1/2 in. and 3/4 in.
K05B1015	1 in.	Screen, O-rings	Repair Kit for D05 and DS05 Series 1 in. and 1 1/4 in.
K05B1035	3/4 in., 1 in.	Screen, O-ring	Repair kit for 3/4 inch and 1 inch valves D05T
K06B1030		Strainer, strainer support, 2 O-Rings	Strainer Kit for D06G and DS06G 1 1/2 in. and 2 in.
K06D1044	1 1/2 in., 2 in.	Cartridge, screen, O-ring	Repair Kit for D06G and DS06G Series 1 1/2 in. and 2 in.

Union Kit

Product Number	Valve size	Includes	Description
K06U1069	1/2 in.	Nut, NPT internally threaded tailpiece, gasket	Union Kit for 1/2 in. NPT D06 Series valves
K06U1077	3/4 in.	Nut, NPT internally threaded tailpiece, gasket	Union Kit for 3/4 in. NPT D06 Series valves
K06U1085	1 in.	Nut, NPT internally threaded tailpiece, gasket	Union Kit for 1 in. NPT D06 Series valves
K06U1093	1/2 in.	Nut, Sweat tail piece, gasket	Union Kit for 1/2 in. Sweat D06 Series valves
K06U1101	3/4 in.	Nut, Sweat tail piece, gasket	Union Kit for 3/4 in. Sweat D06 Series valves
K06U1119	1 in.	Nut, Sweat tail piece, gasket	Union Kit for 1 in. Sweat D06 Series valves
K06U1135	1 1/4 in.	Nut, NPT internally threaded tailpiece, gasket	Union Kit for 1 1/4 in. NPT D05 and DS05 Series valves
K06U1143	1 1/4 in.	Nut, Sweat tail piece, gasket	Union Kit for 1 1/4 in. Sweat D05 and DS05 Series valves

Water Flow Control—Pressure Regulating Valves

D05, DS05 Pressure Regulating Valves—Accessories

OS Number	Description	Used with
202868	3/4 inch Rubber filter washer, for use with U06P1045 plastic stand-in-pipe	
202869	1 inch Rubber filter washer, for use with U06P1052 plastic stand-in-pipe	
203223	1/2 inch and 3/4 inch Bonnet assembly for use with D05	D05
203224	Bonnet assembly	
272838	Bonnet	
272839	Bonnet	
272840	Union gaskets	
272841	Union gaskets	
272842	Union gasket	
272843	Union gaskets	
U06P1045	3/4 in. Spacer for D05 Series	D05
U06P1052	1 in. Spacer for D05 Series	D05

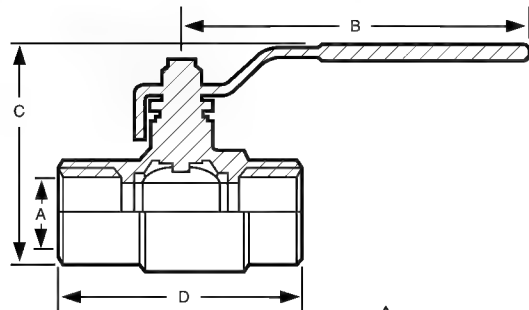
D06, DS06 Pressure Regulating Valves—Accessories


OS Number	Description	Used With
0900368	Bonnet Assembly for 1/2 in. and 3/4 in. D06 Valves	—
272859	Union gaskets	D06 Valves
272867	Replacement bonnet kit	—
272861	Brass strainer cup and O-ring for 1 1/2 inch and 2 inch DS06G valves	DS06G

B100 Bronze Ball Valve for Shutoff Applications



Dimension Diagrams



SIZE (INCHES)	A IN. (MM)	B IN. (MM)	C IN. (MM)	D IN. (MM)	THREADED	SWEAT	C _v 
1/4	0.473 (12)	3.347 (85)	2.402 (61)	2.008 (51)	-	-	7.2
3/8	0.473 (12)	3.347 (85)	2.402 (61)	2.008 (51)	2.008 (51)	2.008 (51)	18.0
1/2	0.591 (15)	3.347 (85)	2.402 (61)	2.441 (62)	2.441 (62)	2.441 (62)	23.0
3/4	0.748 (19)	4.095 (104)	2.992 (76)	2.756 (70)	2.835 (72)	2.835 (72)	34.0
1	0.985 (25)	4.095 (104)	3.189 (81)	3.347 (85)	3.386 (86)	3.386 (86)	66.0
1-1/4	1.260 (32)	4.803 (122)	4.095 (104)	3.898 (99)	3.898 (99)	3.898 (99)	82.0
1-1/2	1.575 (40)	4.803 (122)	4.449 (113)	4.334 (110)	4.410 (112)	4.410 (112)	195.0
2	1.969 (50)	6.024 (153)	5.394 (137)	5.276 (134)	5.355 (136)	5.355 (136)	280.0
2-1/2	2.362 (60)	7.874 (200)	6.732 (171)	5.591 (142)	6.299 (160)	6.299 (160)	370.0
3	2.992 (76)	11.024 (280)	8.858 (225)	7.007 (178)	7.874 (200)	7.874 (200)	460.0
4	3.740 (95)	11.024 (280)	10.315 (262)	8.268 (210)	9.921 (252)	9.921 (252)	750.0

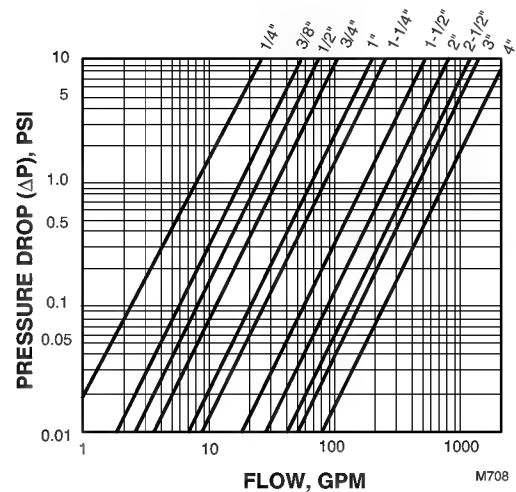
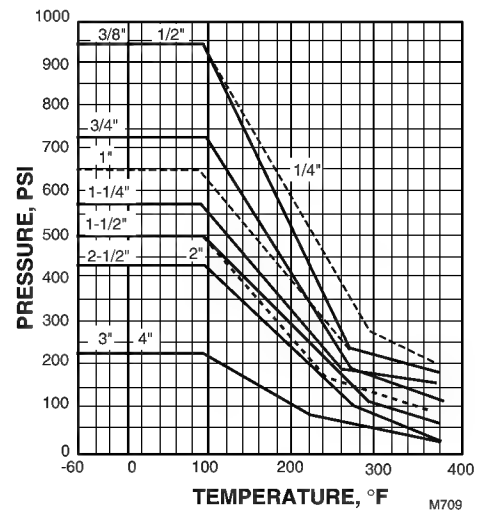
 END-TO-END DIMENSIONS ARE APPROXIMATE.

 C_v IS gpm WITH A 1 psi PRESSURE DROP AT 60° F. M3184A

Fully Ported, Bronze ball valves for most heating, plumbing and industrial applications.

- Broad temperature and pressure ratings for wide range of applications—water, oil and steam service.
- Cast bronze (85-5-5) is ideal for applications requiring low zinc content.
- Fully ported bronze ball valves have higher flow rates with less turbulence, noise and pressure drop than reduced or standard port ball valves.
- Easy installation.
- Two-piece cast bronze body provides strength and resistance to corrosion.
- Bottom-loaded, blow-out proof stem with adjustable PTFE seal provides extended service life, durability and safety.
- Cushioned, corrosion-resistant steel handle makes operation easier.
- Meet Federal Specification WW-V-35C, Type II, Class A, Style 3 end connections A and C (threaded and solder).
- Not for use with natural or propane (LP) gas.
- Not for use in throttling applications.

Pressure Ratings



Water Flow Control—Water Shut-off Ball Valves

Application Type: Fully ported, bronze ball valves for most heating, plumbing and industrial applications.

Temperature Range: -60 F to 380 F

Gas Rated: No

Materials, Body: Cast Bronze

Materials, Seat: PTFE

Materials, Stem: Brass

Materials, Ball: Brass, chrome plated

Packing Materials: PTFE

Gas Approvals: No

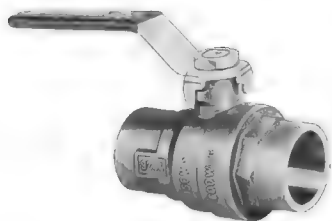
Product Number	Valve size	Capacity (Cv)	Port Size	Pipe Connections	Maximum Pressure	Handle Type
					(psi)	
B100S5012	3/8 in.	18 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5020	1/2 in.	23 Cv	Full	Sweat	500 psi	
B100S5028	3/4 in.	34 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5036	1 in.	66 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5044	1 1/4 in.	82 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5052	1 1/2 in.	195 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5060	2 in.	280 Cv	Full	Sweat	500 psi	Zinc plated steel with vinyl cover
B100S5078	2 1/2 in.	370 Cv	Full	Sweat	400 psi	Zinc plated steel with vinyl cover
B100S5086	3 in.	460 Cv	Full	Sweat	400 psi	Zinc plated steel with vinyl cover
B100S5094	4 in.	750 Cv	Full	Sweat	400 psi	Zinc plated steel with vinyl cover
B100T1001	1/4 in.	7.2 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1009	3/8 in.	18 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1017	1/2 in.	23 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1025	3/4 in.	34 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1033	1 in.	66 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1041	1 1/4 in.	82 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1049	1 1/2 in.	195 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1057	2 in.	280 Cv	Full	NPT Threaded	500 psi	Zinc plated steel with vinyl cover
B100T1068	2 1/2 in.	370 Cv	Full	NPT Threaded	400 psi	Zinc plated steel with vinyl cover
B100T1076	3 in.	460 Cv	Full	NPT Threaded	400 psi	Zinc plated steel with vinyl cover
B100T1084	4 in.	750 Cv	Full	NPT Threaded	400 psi	Zinc plated steel with vinyl cover

B100 Ball Valve Replacement Part

OS Number	Description
3008300	Replacement handle for 3/8 in. and 1/2 in. B100 series valves
3008301	Replacement handle for 3/4 in. and 1 in. B100 series valves
3008302	Replacement handle for 1 1/4 in. and 1 1/2 in. B100 series valves
3008303	Replacement handle for 2 in. B100 series valves
3008304	Replacement handle for 2 1/2 in. B100 series valves
3008305	Replacement handle for 3 in. B100 series valves
3008306	Replacement handle for 4 in. B100 series valves

Water Flow Control—Water Shut-off Ball Valves

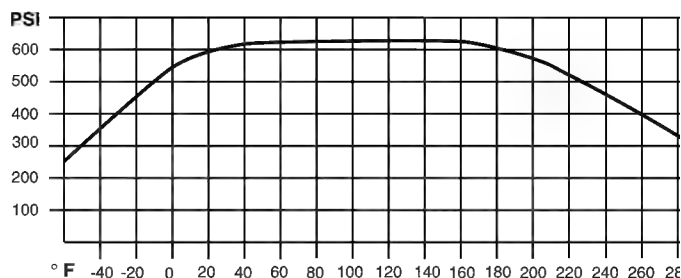
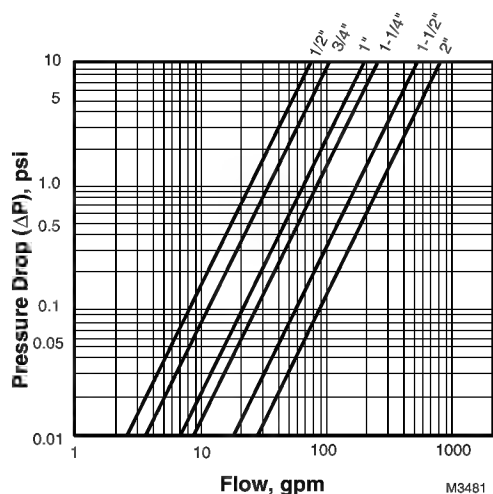
B200 Brass Ball Valves for Shutoff Applications



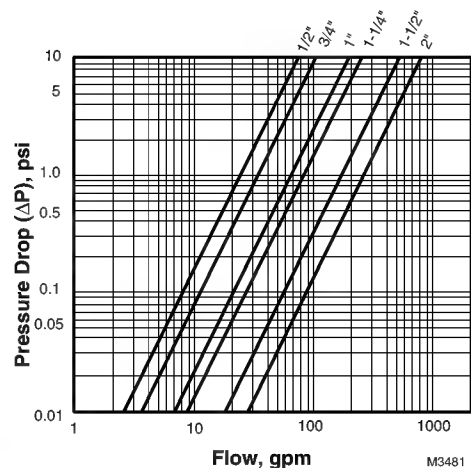
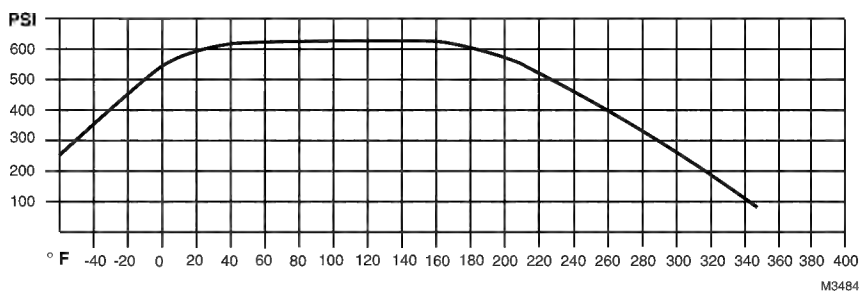
Fully Ported, Brass ball valves for most heating, plumbing and industrial applications. Honeywell is pleased to introduce its new line of B200 Ball Valves. The new valves offer increased agency listing approvals as well as an enhanced design for increased solderability and longer service life. New style order numbers listed on page 18. Old style valves will be shipped until stock is depleted. The B200T series retain the same order numbers and offer improved agency listing approvals. The B200S series order numbers have changed.

- Broad temperature and pressure ratings for wide range of applications—water, oil, gas and steam service.
- Fully ported brass ball valves have higher flow rates with less turbulence, noise and pressure drop than reduced or standard port ball valves.
- Easy installation.
- Two-piece cast bronze body provides strength and resistance to corrosion.
- Bottom-loaded, blow-out proof stem with NBR70 seals provides extended service life, durability and safety.
- Cushioned, corrosion-resistant steel handle makes operation easier.
- Meets Federal Specification WW-V-35C, Type II, Class A, style 3 end connections A and C (threaded and solder).
- More flexible; more universal than similar valves.
- Not for use in throttling applications.
- Competitively priced.

Dimension Diagrams



Pressure Ratings



Application Type: Fully ported, brass ball valves for most heating, plumbing and industrial applications.

Temperature Range: -60 F to 345 F

Gas Rated: No

Materials, Body: Forged Brass

Materials, Seat: PTFE

Materials, Stem: Brass

Materials, Ball: Brass, chrome plated

Packing Materials: NBR

Gas Approvals: No

Water Flow Control—Water Shut-off Ball Valves

Product Number	Valve size	Dimensions, Approximate		Capacity	Port Size	Pipe Connections	Maximum Pressure		Handle Type
		(inch)	(mm)				(psi)	(kPa)	
B200S7015	1/2 in.	1 25/32 in. high, 2 11/64 in. long, 3 11/32 in. handle length	45 mm high, 55 mm long, 85 mm handle length	23 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S7023	3/4 in.	1 15/16 in. high, 2 7/8 in. long, 3 11/32 in. handle length	49 mm high, 73 mm long, 85 mm handle length	34 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S7031	1 in.	2 5/16 in. high, 3 7/16 in. long, 3 11/32 in. handle length	59 mm high, 87 mm long, 110 mm handle length	66 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S7049	1 1/4 in.	2 1/2 in. high, 3 27/32 in. long, 4 11/32 in. handle length	64 mm high, 100 mm long, 110 mm handle length	82 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S7056	1 1/2 in.	3 7/32 in. high, 4 21/32 in. long, 5 5/16 in. handle length	82 mm high, 118 mm long, 135 mm handle length	195 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S7064	2 in.	3 17/32 in. high, 5 21/32 in. long, 5 5/16 in. handle length	90 mm high, 144 mm long, 135 mm handle length	280 Cv	Full	Sweat	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200S9003	1/2 in.	1 25/32 in. high, 2 11/64 in. long, 3 11/32 in. handle length	45 mm high, 55 mm long, 85 mm handle length	23 Cv	Full	Sweat	600 psi	4137 kPa	Aluminum lever, painted
B200S9011	3/4 in.	1 15/16 in. high, 2 7/8 in. long, 3 11/32 in. handle length	49 mm high, 73 mm long, 85 mm handle length	34 Cv	Full	Sweat	600 psi	4137 kPa	Aluminum lever, painted
B200T1017	1/2 in.	1 25/32 in. high, 2 7/16 in. long, 3 11/32 in. handle length	45 mm high, 62 mm long, 85 mm handle length	34 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200T1025	3/4 in.	1 15/16 in. high, 2 25/32 in. long, 3 11/32 in. handle length	49 mm high, 71 mm long, 85 mm handle length	34 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200T1033	1 in.	2 5/16 in. high, 3 9/32 in. long, 4 11/32 in. handle length	59 mm high, 83 mm long, 110 mm handle length	66 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200T1041	1 1/4 in.	2 1/2 in. high, 3 27/32 in. long, 4 11/32 in. handle length	64 mm high, 98 mm long, 110 mm handle length	82 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200T1058	1 1/2 in.	3 7/32 in. high, 4 11/32 in. long, 5 5/16 in. handle length	82 mm high, 110 mm long, 135 mm handle length	195 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover
B200T1066	2 in.	3 17/32 in. high, 5 1/4 in. long, 5 5/16 in. handle length	90 mm high, 133 mm long, 135 mm handle length	280 Cv	Full	NPT Threaded	600 psi	4137 kPa	Zinc plated steel with vinyl cover

B200 Ball Valve Replacement Part

OS Number	Description
272790	Yellow plastic coated steel lever for B200 1/2 and 3/4 inch, includes Hex nut
272791	Yellow plastic coated Aluminum lever for B200 1/2 and 1 inch, including screw
272792	Yellow plastic coated steel lever for B200 1 and 1 1/4 inch, including Hex nut
272794	Yellow plastic coated steel lever for B200 1 1/2 and 2 inch
272799	Yellow enamel aluminum tee for 1/2 and 3/4 inch B200 Valves Including screws
272800	Yellow enamel aluminum tee for 1 and 1 1/4 inch B200 Valves including Screws

F74C Reversing Rinsing Filter

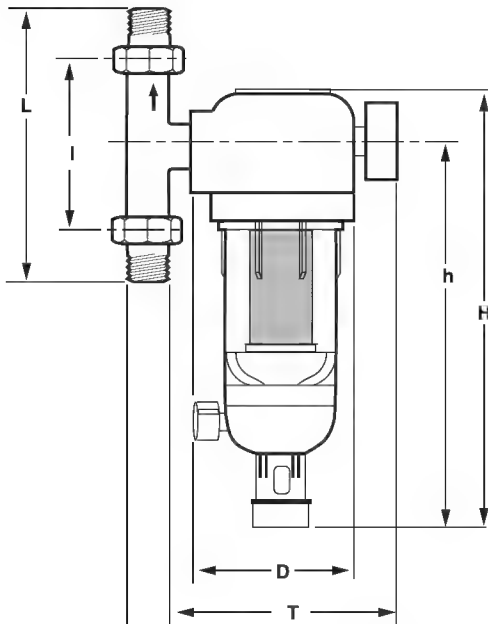


F74C Reverse Rinsing Filters ensure a continuous supply of filtered water. The fine filter prevents the ingress of foreign bodies, such as rust particle and grains of sand. Both horizontal and vertical installations are possible.

“Whole House” Protection

- Filtered water supplied even during reverse rinsing.
- Patented reverse rinsing system. Fast and thorough cleaning of the filter with a small amount of water.
- Bayonet connection enables simple retro-fitting of reverse rinsing actuator.
- Large filter surface.
- Shock resistant, clear synthetic material filter bowl enables easy inspection of filter contamination.
- Filter insert fully interchangeable.
- Simple operation.
- Tested for reliability.

Dimension Diagrams



Dimension	Connection Size	
	3/4 (19)	1 (25)
H	12-13/16 (324)	12-13/16 (324)
h	11-3/16 (285)	11-3/16 (285)
L	6-3/8 (162)	7-1/4 (184)
I	3-9/16 (90)	3-15/16 (100)
D	4-1/8 (105)	4-1/8 (105)
T	5-5/16 (150)	5-5/16 (150)

M18087A

Body Materials: Plastic with Brass Fittings

Pressure Ratings: 230 psi max.

Sump: Clear Plastic

Temperature Ratings (Maximum): 86 F (30 C)

Union: yes

Union Connection: Sweat and threaded

Accessories:

Optional Automatic Backwash See page 264

Replacement Parts:

U76S5015 F76 tailpiece for 3/4 in. Sweat

U76S5023 F76 tailpiece for 1 in. Sweat

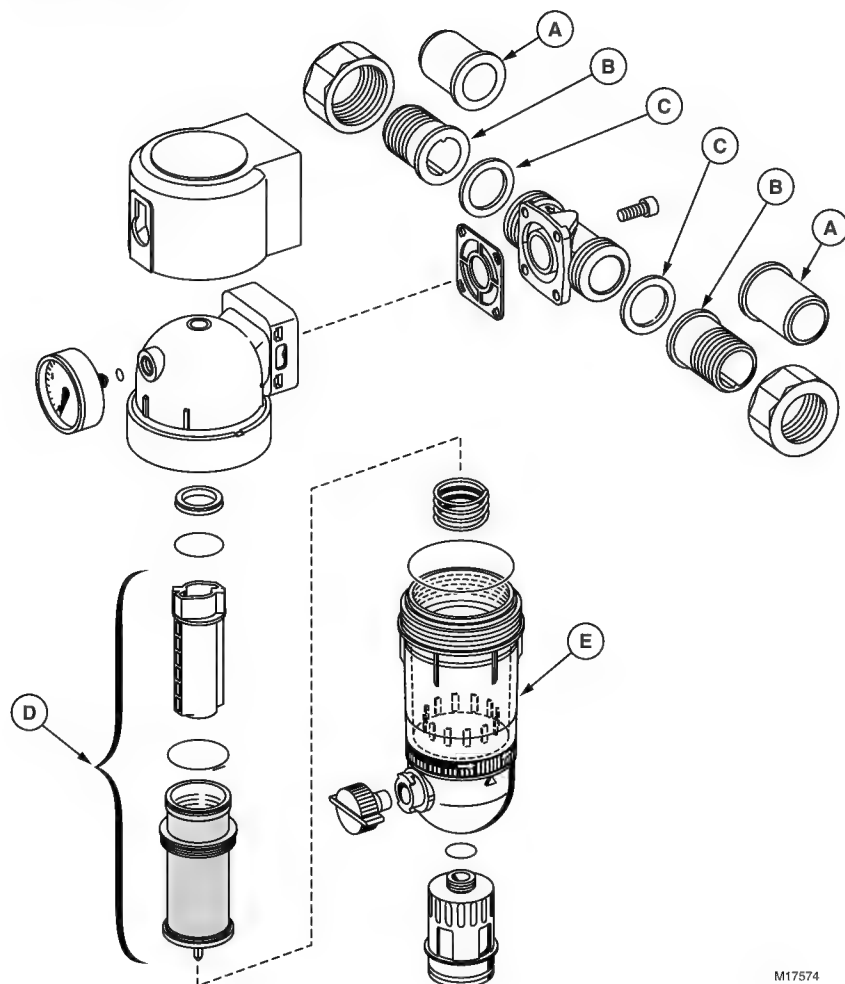
U76T1014 F76 tailpiece for 3/4 in. NPT

U76T1022 F76 tailpiece for 1 in. NPT

Water Quality—Water Sediment Filters

Product Number	Size	Screen Size	Capacity	Weight		Description	Includes
			Cv	(lb)	(kg)		
F74C1015	3/4 in.	100 micron screen	9 Cv	6 lb	2.7 kg	3/4 inch filter	gauge and wrench
F74C1023	1 in. 1 in.	100 micron screen	10 Cv	7 lb	3.2 kg	1 inch filter	gauge and wrench

F74C exploded view



M17574

F74C Parts and Accessories.

Product Number	Description	Pack Type	Contents
AF74-1A	Replacement filter insert assembly for F74C, 3/4 in. and 1 in., 100 micron (D).	Unit, no overpack	Includes the filter insert complete (O-ring, mesh with mesh support, impeller), sump O-ring (mounted between the filter housing and the sump).
KF74-1A	Replacement sump assembly for F74 (E).	Unit, no overpack	Includes the sump assembly complete (ball valve, plastic air gap adaptor), sump O-ring (mounted between the filter housing and the sump).
TBD	Opaque sump cover for F74, 3/4 in. and 1 in.	Unit, no overpack	
U76S5015	3/4 in. sweat tailpiece for F74 (A).	Unit, no overpack	Tailpiece
U76S5023	1 in. sweat tailpiece for F74 (A).	Unit, no overpack	Tailpiece
U76T1014	3/4 in. NPT tailpiece for F74 (B).	Unit, no overpack	Tailpiece
U76T1022	1 in. NPT tailpiece for F74 (B).	Unit no overpack	Tailpiece
0901444	Union gasket for F74, 3/4 in. (C).	10 per bag	10 gaskets
0901445	Union gasket for F74, 1 in. (C).	10 per bag	10 gaskets

F76S Water Filters

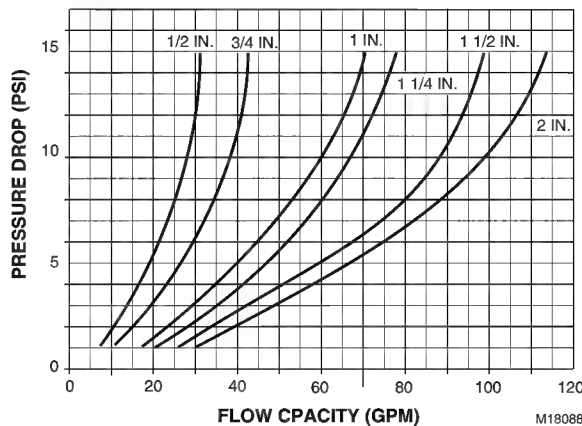


High flow capacity water filter used to remove sediment and debris from residential or commercial water systems.

“Whole House” Protection

- Ideally suited for sediment removal applications that would quickly plug and restrict the flow of normal filters.
- Used as a prefilter, the F76 protects elements of the water system, including specialized treatment devices or other common fixtures and appliances.
- The flow filtering capacity and ease of cleaning make the F76 ideal for the most demanding applications.
- Built-in secondary filter provides an uninterrupted supply of filtered water during backwashing.

F76S Capacities.



Body Materials: Brass

Screen Size: 100 micron screen

Pressure Ratings: Bronze Sump Inlet: 360 psi

Plastic Sump Inlet: 230 psi

Sump: Clear Plastic

Temperature Ratings (Maximum): Bronze Sump: 158 F

Plastic Sump: 104 F

(Bronze Sump: 70 C) (Plastic Sump: 40 C)

Union: yes

Union Connection: External NPT Threaded and Sweat

Includes: gauge and service wrench

Accessories:

Optional Automatic Backwash See page 264

Product Number	Dimensions, Approximate		Size	Capacity		Weight	
	(inch)	(mm)		Cv	Kv	(lb)	(kg)
F76S1007	17 11/16 in. high, 6 11/16 in. wide, 3 13/16 in. deep	449 mm high, 170 mm wide, 97 mm deep	1/2 in.	8 Cv	6.9 Kv	6.4 lb	2.9 kg
F76S1015	17 11/16 in. high, 7 in. wide, 3 13/16 in. deep	449 mm high, 178 mm wide, 97 mm deep	3/4 in.	11 Cv	9.5 Kv	6.4 lb	2.9 kg
F76S1023	17 7/8 in. high, 8 1/4 in. wide, 3 13/16 in. deep	453 mm high, 209 mm wide, 97 mm deep	1 in.	18 Cv	15.6 Kv	6.8 lb	3.1 kg
F76S1031	17 7/8 in. high, 8 3/4 in. wide, 3 13/16 in. deep	453 mm high, 222 mm wide, 97 mm deep	1 1/4 in.	20 Cv	17.3 Kv	7.3 lb	3.3 kg
F76S1049	20 5/16 in. high, 10 1/2 in. wide, 4 3/4 in. deep	532 mm high, 246 mm wide, 119 mm deep	1 1/2 in.	26 Cv	22.5 Kv	8.8 lb	4.0 kg
F76S1056	20 5/16 in. high, 10 1/2 in. wide, 4 3/4 in. deep	532 mm high, 267 mm wide, 119 mm deep	2 in.	30 Cv	26 Kv	10.6 lb	4.8 kg

F76S Water Filter exploded view. Parts are keyed to Replacement Parts List.



Parts And Accessories For New Style F76S Filters

Description	1/2 in.	3/4 in.	1 in.	1-1/4 in.	1-1/2 in.	2 in.
(A) Pressure Gauge (new style F76S only)						
Standard Pressure (230 psi)	N/A	N/A	N/A	N/A	N/A	N/A
High Pressure (400 psi)						
(B) Tailpieces (same for new and old style)						
Sweat	U76S5007	U76S5015	U76S5023	U76S5031	U76S5039	U76S5047
Threaded (shown)	U76T1004	U76T1014	U76T1022	U76T1030	U76T1038	U76T1046
(C) Union Nuts	N/A	N/A	N/A	N/A	N/A	N/A
(D) Tailpiece Gaskets (sold in packs of 10)	0901444	0901444	0901445	0901446	0901447	0901448
(E) Guide Barrel	N/A	N/A	N/A	N/A	N/A	N/A
Screen Insert Complete (new style only)						
20 Micron	AF11S-1B	AF11S-1B	AF11S-1B	AF11S-1B	AF11S-112B	AF11S-112B
50 Micron	AF11S-1C	AF11S-1C	AF11S-1C	AF11S-1C	AF11S-112C	AF11S-112C
100 Micron	AF11S-1A	AF11S-1A	AF11S-1A	AF11S-1A	AF11S-112A	AF11S-112A
200 Micron	AF11S-1D	AF11S-1D	AF11S-1D	AF11S-1D	AF11S-112D	AF11S-112D
Includes:						
(F) Barrel O-ring						
(G) Impeller and Screen Assembly						
(J) Chamber O-ring						
(H) Base Spring	N/A	N/A	N/A	N/A	N/A	N/A
(J) Chamber O-ring (sold in packs of 10)	0900747	0900747	0900747	0900747	0900748	0900748
Filter Sump Kits (new style only)						
Clear Plastic	KF11S-1A	KF11S-1A	KF11S-1A	KF11S-1A	KF11S-112A	KF11S-112A
Bronze	FT09RS-1A	FT09RS-1A	FT09RS-1A	FT09RS-1A	FT09RS-112A	FT09RS-112A
Includes:						
(J) Chamber O-ring						
(K) Sump						
(L) Ball Valve O-ring						
(M) Integrated Ball Valve						
(N) Memory Ring						
(P) Ball Valve Bowl						
(Q) Ball Valve Knob						
(R) Joint Ring Seal						
(S) Drain Connector						
Ball Valve Assembly (new style only)	KH11S-1A	KH11S-1A	KH11S-1A	KH11S-1A	KH11S-1A	KH11S-1A
Includes:						
(M) Ball Valve						
(L) Ball Valve O-ring						

NOTES: Parts and accessories for the F76S model filters do not fit interchangeably into the F76A, B, G or H model filters.

N/A: Part number not available at time of printing.

Water Quality—Water Sediment Filters

FF06 Rinseable Fine Filter

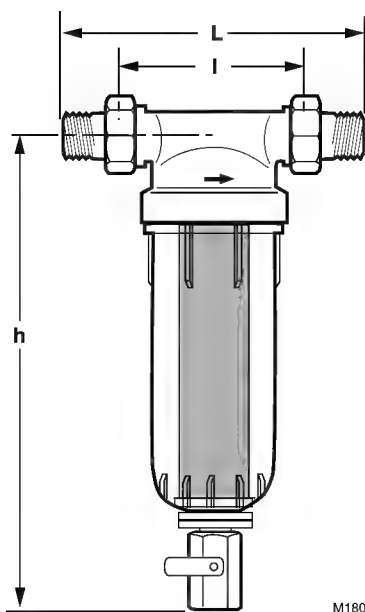


FF06 Rinseable Fine Filter ensures a continuous supply of filtered water. The fine filter stops the flow of particulates, such as rust particles and grains of sand. Sediment collected at the bottom of the filter bowl can simply be removed by flushing with the turn of a lever. These compact filters were designed to fit where space is limited.

“Point of Use” Applications

- Easy installation.
- Same installed dimensions as F74C for easy future upgrade to a backwash filter.
- Continuous supply of filtered water, even during rinse cycle.
- Shock resistant clear synthetic material filter bowl enables easy inspection for filter contamination.
- Filter bowl and sieve are easily exchanged.
- Tested for reliability.
- Shipped complete with threaded and sweat union connections and service wrench.

Dimension Diagrams



Pipe Size	Dimensions in inch (mm)		
	L	I	h
3/4	6-1/4 (158)	3-9/16 (90)	7-1/16 (180)
1	7-1/16 (179)	3-15/16 (100)	7-1/16 (180)

Body Materials: Dezincification-resistant (DZR) forged Brass

Pressure Ratings: 230 psi max.

Sump: Clear Plastic

Temperature Ratings (Maximum): 104 F (40 C)

Union: yes

Union Connection: External NPT Threaded and Sweat

Replacement Parts:

U76S5015 F76 tailpiece for 3/4 in. Sweat

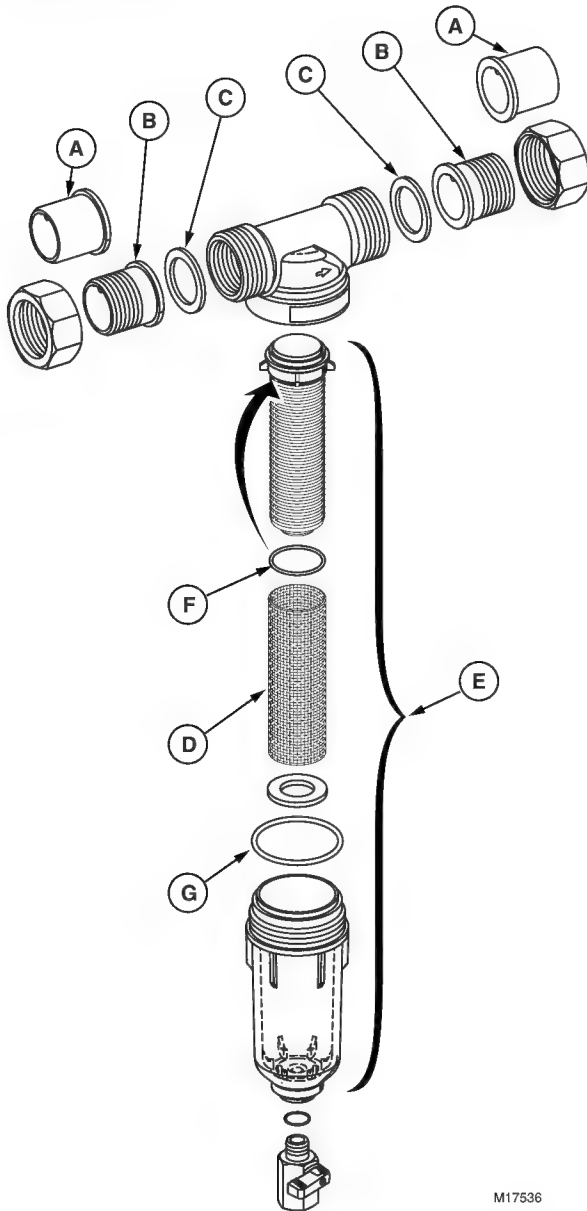
U76S5023 F76 tailpiece for 1 in. Sweat

U76T1014 F76 tailpiece for 3/4 in. NPT

U76T1022 F76 tailpiece for 1 in. NPT

Product Number	Dimensions, Approximate		Size	Screen Size	Capacity	Weight		Description	Includes
	(inch)	(mm)				(lb)	(kg)		
FF06A1013	7 1/16 in. high, 6 1/4 in. long	180 mm high, 158 mm long	3/4 in.	100 micron screen	7.7 Cv	2.2 lb	1.0 kg	3/4 inch filter	service wrench
FF06A1021	7 1/16 in. high, 7 1/16 in. long	180 mm high, 180 mm long	1 in.	100 micron screen	10.2 Cv	2.9 lb	1.3 kg	1 inch filter	service wrench

FF06 exploded view



FF06 Replacement Parts

Item Number	Part Number	Description
A	U76S5015	3/4 in. sweat tailpiece.
	U76S55023	1 in. sweat tailpiece.
B	U76T1014	3/4 in. NPT tailpiece.
	U76T1022	1 in. NPT tailpiece.
C	0901444	Gasket, 3/4 in. (10 pcs)
	0901445	Gasket, 1 in. (10 pcs)
D & G	AS 06-1A	Filter mesh and sump O-ring (5 pcs)
E	KF 06-1A	Clear filter bowl, complete with filter mesh and carrier.
F	903128	Filter mesh carrier O-ring set (pack of 10).
G	901499	Filter bowl O-ring set (pack of 10).

Water Quality—Water Sediment Filters

MV876 Automatic Backwash Control



Dimensions, Approximate: 6 in. high, 2-3/4 in wide, 6-5/16 in. deep
(152 mm high, 70mm wide, 160 mm deep)

Backwash Intervals: 1 day or 8 days

Battery Back-up: None

The MV876 Automatic-Backwash Control is fitted to the drain valve of an F76 or F74 and is programmed by the user to automatically perform the backwash function according to the desired frequency.

- Bayonet fitting for the MV876B1018 simplifies upgrade to automatic backwash.
- 16 field-selectable backwash intervals for the MV876B1018 simplifies upgrade to automatic backwash.
- 16 field-selectable backwash intervals (from four times a day to once every four months) on the MV876B eliminate need for external timer.
- Connections for external control on the MV876B provide for use in automated systems and differential pressure control.
- MV876B can be turned manually to initiate backwash.
- Battery (AA) backup to insure completion of backwash cycle in case of power loss.

Cycle Time (sec): 20 sec

Electrical Ratings (Vac): 24 Vac, 10 W

External Control Connections: None

Product Number	Display	Interval Selection	Replaces	Description	Includes
MV876B1000	Digital	16 field selectable via keypad	MV876A8022 MV876A8014 MV876A8006	Automatic backwash control, fits 1/2 in. to 2 in. F76A models.	Drain valve
MV876B1018	Digital	16 field selectable via keypad	—	Automatic backwash control, fits 1/2 in. to 2 in. F76S models and F74C models.	

Water Sediment Filter Parts and Accessories

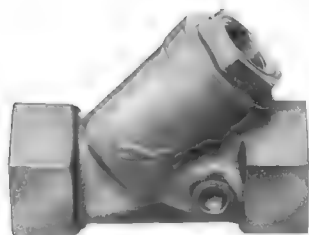
OS Number	Description
AF11S-112A	100 Micron Screen kit for F76S Water Filter 1-1/2 in. to 2 in.
AF11S-112B	20 Micron Screen kit for F76S Water Filter 1-1/2 in. to 2 in.
AF11S-112C	50 Micron Screen kit for F76S Water Filter 1-1/2 in. to 2 in.
AF11S-112D	200 Micron Screen kit for F76S Water Filter 1-1/2 in. to 2 in.
AF11S-1A	100 Micron Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in.
AF11S-1B	20 Micron Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in.
AF11S-1C	50 Micron Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in.
AF11S-1D	200 Micron Screen kit for F76S Water Filter 1/2 in. to 1-1/4 in.
FT09RS-112A	Bronze Sump for F76S water filter 1-1/2 in. to 2 in.
FT09RS-1A	Bronze Sump for F76S water filter 1/2 in. to 1-1/4 in.
KF11S-112A	Clear Plastic Sump for F76S water filter 1-1/2 in. to 2 in.
KF11S-1A	Clear Plastic Sump for F76S water filter 1/2 in. to 1-1/4 in.
KH11S-1A	Ball Valve for F76S water filter 1/2 in. to 2 in.
PF76C1007	Clear Plastic Sump for F76S water filter 1/2 in. and 3/4 in.
PF76C1015	Clear Plastic Sump for F76S water filter 1 in. and 1-1/4 in.
PF76C1023	Clear Plastic Sump for F76S water filter 1 1/2 in. and 2 in.
QF76G2053	F76 Filter insert for 1/2 in. and 3/4 in.
QF76G2061	F76 Filter insert for 1 in. and 1 1/4 in.
QF76G2069	F76 Filter insert for 1 1/2 in. and 2 in.
QF76Q2007	20 micron screen Replacement Sieve for F76A water filters for 1/2 in. and 3/4 in. sizes
QF76Q2015	20 micron screen Replacement Sieve for F76A water filters for 1 in. and 1 1/4 in. sizes
QF76Q2023	20 micron screen Replacement Sieve for F76A water filters for 1 1/2 in. and 2 in. sizes
QF76R2030	50 micron screen Replacement Sieve for F76A water filters for 1/2 in. and 3/4 in. sizes

Water Quality—Water Sediment Filters

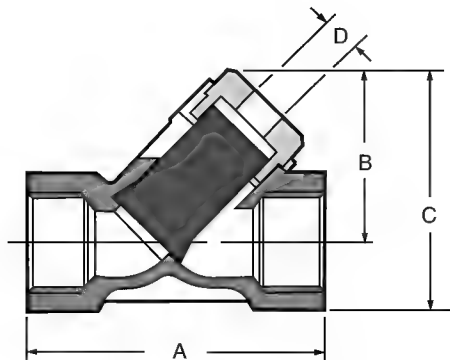
OS Number	Description
QF76R2038	50 micron screen Replacement Sieve for F76A water filters for 1 in. and 1 1/4 in. sizes
QF76R2046	50 micron screen Replacement Sieve for F76A water filters for 1 1/2 in. and 2 in. sizes
QF76S2051	100 micron screen Replacement Sieve for F76A water filters for 1/2 in. and 3/4 in. sizes
QF76S2059	100 micron screen Replacement Sieve for F76A water filters for 1 in. and 1 1/4 in. sizes
QF76S2067	100 micron screen Replacement Sieve for F76A water filters for 1 1/2 in. and 2 in. sizes
QF76T2074	200 micron screen Replacement Sieve for F76A water filters for 1/2 in. and 3/4 in. sizes
QF76T2082	200 micron screen Replacement Sieve for F76A water filters for 1 in. and 1 1/4 in. sizes
QF76T2090	200 micron screen Replacement Sieve for F76A water filters for 1 1/2 in. and 2 in. sizes
U76S5007	F76 tailpiece for 1/2 in. Sweat
U76S5015	F76 tailpiece for 3/4 in. Sweat
U76S5023	F76 tailpiece for 1 in. Sweat
U76S5031	F76 tailpiece for 1 1/4 in. Sweat
U76S5039	F76 tailpiece for 1 1/2 in. Sweat
U76S5047	F76 tailpiece for 2 in. Sweat
U76T1014	F76 tailpiece for 3/4 in. NPT
U76T1022	F76 tailpiece for 1 in. NPT
U76T1030	F76 tailpiece for 1 1/4 in. NPT
U76T1038	F76 tailpiece for 1 1/2 in. NPT

Water Quality—Y-Strainers

FY32 Y-Strainer



Dimension Diagrams

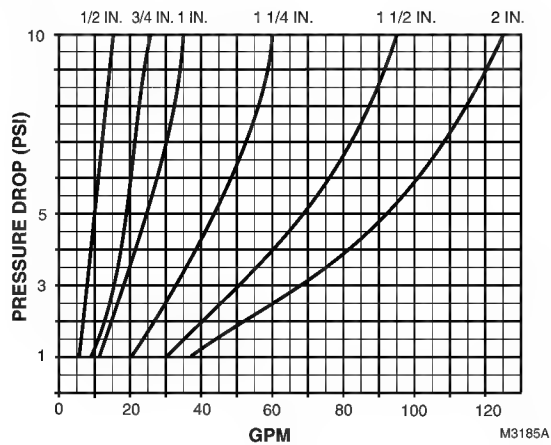


- Bronze Y - pattern strainers protect regulators, pumps, meters and other controls and equipment from damage due to sediment, scale, metal chips or other foreign materials.
- For use with water, steam, oil, air and gas.
 - Includes blow-off tapped cap (closure plug not supplied).
 - Minimum pressure loss, even with 50 percent clogged screen.
 - Corrosion-resistant bronze body and cap, with 18 mesh stainless steel screen.

SIZE (IN.)	A		B		C		D PLUG TAP (NPT)	WEIGHT (LBS. (KG))
	THREADED	SWEAT	THREADED	SWEAT	THREADED	SWEAT		
3/8	2-11/32 (60)	—	1-5/16 (33)	—	1-13/16 (46)	—	1/4	0.50 (0.23)
1/2	2-25/32 (71)	2-3/4 (70)	1-3/8 (36)	1-3/8 (36)	1-31/32 (50)	1-13/16 (46)	1/4	0.50 (0.23)
3/4	3-5/32 (80)	3-11/32 (85)	1-11/16 (42)	1-11/16 (42)	2-13/32 (61)	2-3/16 (56)	1/4	0.75 (0.34)
1	3-23/32 (94)	3-25/32 (96)	2-1/8 (54)	2-1/8 (54)	3-1/32 (77)	2-13/16 (71)	1/2	1.25 (0.57)
1-1/4	4-13/32 (112)	4-9/16 (116)	2-1/2 (63)	2-1/2 (63)	3-5/8 (92)	3-5/16 (84)	1/2	2.00 (0.91)
1-1/2	4-27/32 (123)	5-9/32 (134)	3 (76)	3 (76)	4-1/4 (108)	3-15/16 (100)	3/4	2.50 (1.13)
2	5-29/32 (150)	6-1/16 (154)	3-5/8 (91)	3-21/32 (93)	5-3/16 (132)	4-7/8 (123)	1	4.50 (2.04)

M2562

Capacity ratings.



Replacement Parts:

- QF32E1003 Replacement Screen, 18 mesh, 1/2 in. size.
- QF32E1011 Replacement Screen, 18 mesh, 3/4 in. size.
- QF32E1019 Replacement Screen, 18 mesh, 1 in. size.
- QF32E1027 Replacement Screen, 18 mesh, 1 1/4 in. size.
- QF32E1035 Replacement Screen, 18 mesh, 1 1/2 in. size.
- QF32E1043 Replacement Screen, 18 mesh, 1 2 in. size.

Product Number	Size	Type of Connection	C _v	Materials			Plug Tap (NPT)
				Body	Cap	Screen	
FY32S6013	1/2 in.	Sweat	4.6	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/4 NPT
FY32S6021	3/4 in.	Sweat	7.9	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/4 NPT
FY32S6039	1 in.	Sweat	11	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/2 NPT
FY32S6047	1 1/4 in.	Sweat	18.5	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/2 NPT
FY32S6054	1 1/2 in.	Sweat	28.2	Cast Bronze	Cast Bronze	T-304 Stainless Steel	3/4 NPT
FY32S6062	2 in.	Sweat	36.6	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1 NPT
FY32T2003	3/8 in.	NPT Threaded	36.6	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/4 NPT
FY32T2011	1/2 in.	NPT Threaded	4.6	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/4 NPT
FY32T2029	3/4 in.	NPT Threaded	7.9	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/4 NPT
FY32T2037	1 in.	NPT Threaded	11	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/2 NPT
FY32T2045	1 1/4 in.	NPT Threaded	18.5	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1/2 NPT
FY32T2052	1 1/2 in.	NPT Threaded	28.2	Cast Bronze	Cast Bronze	T-304 Stainless Steel	3/4 NPT
FY32T2060	2 in.	NPT Threaded	36.6	Cast Bronze	Cast Bronze	T-304 Stainless Steel	1 NPT

Y-Strainer Parts and Accessories

OS Number	Description
5018000	Y Strainer Replacement Gasket 1 in.
5018500	Y Strainer Replacement Gasket 1 1/4 in.
5019100	Y Strainer Replacement Gasket 1-1/2 in.
5021400	Y Strainer Replacement Gasket 2 in.
QF32E1003	Replacement Screen, 18 mesh, 1/2 in. size.
QF32E1011	Replacement Screen, 18 mesh, 3/4 in. size.
QF32E1019	Replacement Screen, 18 mesh, 1 in. size.
QF32E1027	Replacement Screen, 18 mesh, 1 1/4 in. size.
QF32E1035	Replacement Screen, 18 mesh, 1 1/2 in. size.
QF32E1043	Replacement Screen, 18 mesh, 1 2 in. size.
QF32F1006	Replacement Screen, 80 mesh, 1/2 in. size.
QF32F1014	Replacement Screen, 80 mesh, 3/4 in. size.
QF32F1022	Replacement Screen, 80 mesh, 1 in. size.

Indoor Air Quality

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Electronic Air Cleaner—Residential

F300 Enviracaire Elite Electronic Air Cleaner



Air Cleaner Type: Electronic Air Cleaner

Application: Duct mounted

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=81%, E2=93%, E3=99%

Static Pressure Drop (in. w.c.): 0.26 at max flow

Approvals: Underwriters Laboratories Inc. Listed. File number E30954

Accessories:

W8600A1007 AIRWATCH Indicator

W8600F1006 EAC Performance Indicator, taupe

W8600F1014 EAC Performance Indicator, white

High efficiency electronic air cleaner that mounts in return air duct of forced air heating, cooling and ventilating systems.

- Media post-filter provides enhanced filtration.
- Solid state power supply is self-regulating and maintains peak efficiency during a wide range of cell dirt loading conditions.
- New low-profile door with test button to check system operation.
- Helps filter efficiency-robbing "gunk" before it coats critical system parts.
- Very low pressure drop.
- Exclusive wireless W8600A AIRWATCH indicator reminds customers when to wash cells to keep the unit operating at peak efficiency, as well as when to change UV Lamps and Humidifier Pads. (optional)
- Exclusive 10-year Clean Coil Guarantee.
- Rugged zinc-coated, roll-formed cabinet provides superior strength and corrosion protection.

Replacement Parts:

4074EHG FC37A TERMINAL BOARD REPAIR KIT. CONTAINS 2 CONNECTOR CLIPS, 1 TERMINAL BOARD AND INSTRUCTION SHEET.

4074ETF Bag assembly containing Neon Lamp, Lens and Tie Wrap for 20 in. x 12.5 in. F50F, F300

FC37A1049 10 x 20 inch Air Cleaner Cell

FC37A1064 12.5 x 20 inch Air Cleaner Cell

FC37A1114 10 x 16 inch Air Cleaner Cell

FC37A1130 12.5 x 16 inch Air Cleaner Cell

203365A Conversion Kit for Changing 120V Power Supply to 240V.

50000293-001 High air flow media post-filter for EAC, 16 x 10

50000293-002 High air flow media post-filter for EAC, 16 x 12.5

50000293-003 High air flow media post-filter for EAC, 20 x 10

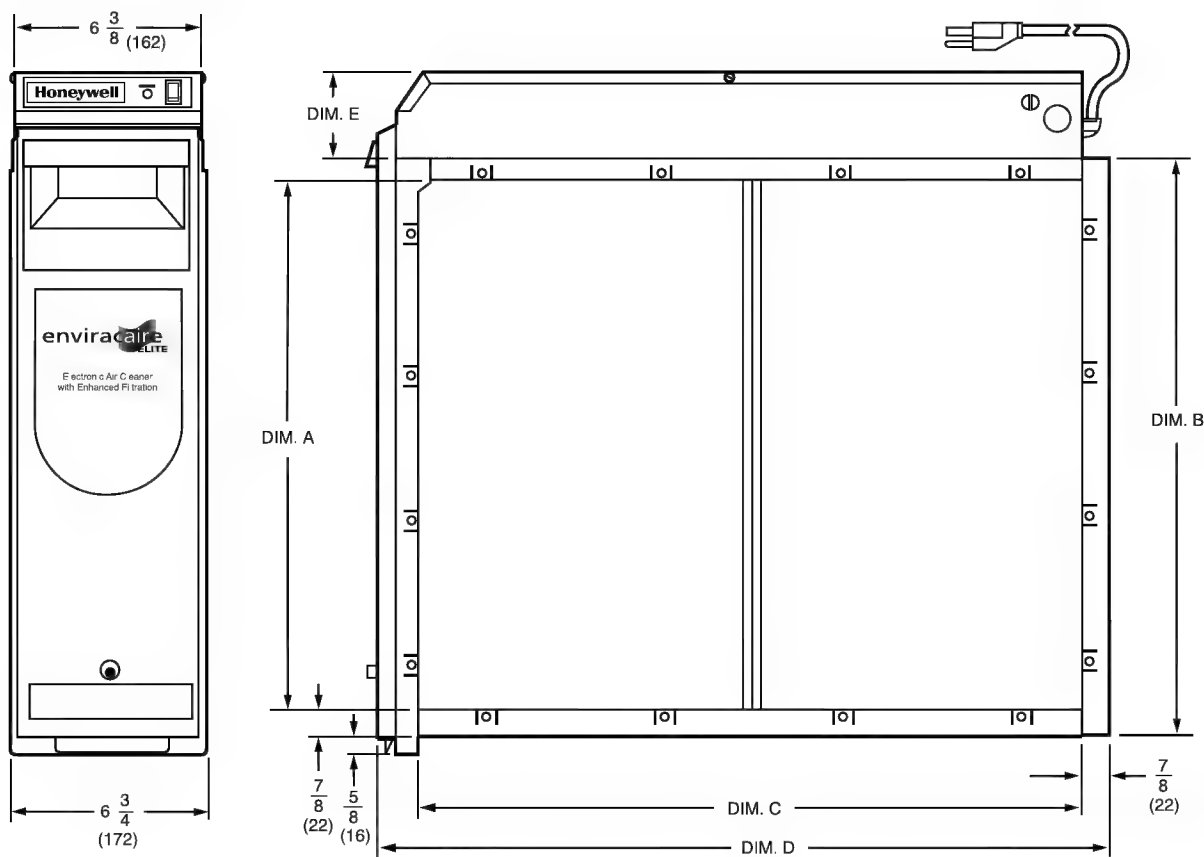
50000293-004 High air flow media post-filter for EAC, 20 x 12.5

4074EZB Air Flow Switch Bag Assembly, with plug connections

	Product Number	Dimensions, Approximate	Electrical Ratings	Airflow Maximum Capacity		Replacement Filters	Additional Features
				(cfm)	(m ³ /hr)		
*	F300E1001	16 in. x 20 in. (406 mm x 508 mm)	120 Vac, 60 Hz, 0.4A max.	1200 cfm	2040 m ³ /hr	Post Filter 50000293-001	Includes high air flow post-filter to enhance filtration performance.
*	F300E1019	16 in. x 25 in. (406 mm x 635 mm)	120 Vac, 60 Hz, 0.4A max.	1400 cfm	2380 m ³ /hr	Post Filter 50000293-002	Includes high air flow post-filter to enhance filtration performance.
*	F300E1027	20 in. x 20 in. (508 mm x 508 mm)	120 Vac, 60 Hz, 0.4A max.	1400 cfm	2380 m ³ /hr	Post Filter 50000293-003	Includes high air flow post-filter to enhance filtration performance.
*	F300E1035	20 in. x 25 in. (508 mm x 635 mm)	120 Vac, 60 Hz, 0.4A max.	2000 cfm	3400 m ³ /hr	Post Filter 50000293-004	Includes high air flow post-filter to enhance filtration performance.
* TRADELINE models • SUPER TRADELINE models							

Electronic Air Cleaner—Residential

Dimension Diagrams

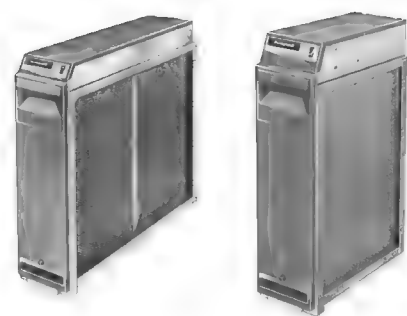


SIZE		DIM. A		DIM. B		DIM. C		DIM. D		DIM. E	
IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
16 X 25	406 X 635	14 7/16	367	16 3/16	411	23 1/4	591	25 1/2	648	2 3/4	70
16 X 20	406 X 508	14 7/16	367	16 3/16	411	18 1/4	457	20 1/2	521	2 3/4	70
20 X 25	508 X 635	18 7/16	468	20 3/16	513	23 1/4	591	25 1/2	648	2 3/4	70
20 X 20	508 X 508	18 7/16	468	20 3/16	513	18 1/4	457	20 1/2	521	2 3/4	70
20 X 12 1/2	508 X 318	18 7/16	468	20 3/16	513	10 7/8	276	13 1/8	333	3 5/8	92

M18951

Electronic Air Cleaner—Residential

F50F Electronic Air Cleaner



Air Cleaner Type: Electronic Air Cleaner

Application: Duct mounted

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=73%, E2=88%, E3=95%

Static Pressure Drop (in. w.c.): 0.2 at max flow

Approvals: Underwriters Laboratories Inc. Listed. Canadian Standards Association Certified.

Replacement Parts:

4074EHG FC37A TERMINAL BOARD REPAIR KIT. CONTAINS 2 CONNECTOR CLIPS, 1 TERMINAL BOARD AND INSTRUCTION SHEET.

High efficiency electronic air cleaner that mounts in return air duct of forced air heating, cooling and ventilating systems.

- Removes airborne particles from the air circulated through it.
- Available in five sizes to fit most return air ducts; adapts to air flow from either side.
- Solid state power supply is self-regulating, maintaining peak air cleaner efficiency over a wide range of cell dirt loading conditions.
- Dual voltage solid state power supply allows more efficient particle charging (8150V) and more collection surface area (4280V).
- Rugged, zinc-coated, roll-formed cabinet provides superior strength and corrosion protection.
- Lower air cleaner profile fits today's smaller equipment cabinets and installation spaces.
- Solid state airflow switch sensitivity makes it compatible with variable speed equipment.
- Safety interlock switch disconnects power and discharges cell when door is opened.
- Test button to check system operation.
- Electronic cells can be washed in most home dishwashers.
- Conforms to FCC Class B requirements.

4074ETF Bag assembly containing Neon Lamp, Lens and Tie Wrap for 20 in. x 12.5 in. F50F, F300

4074ETH Air Flow Switch Bag Assembly, with pin connections

FC37A1049 10 x 20 inch Air Cleaner Cell

FC37A1064 12.5 x 20 inch Air Cleaner Cell

FC37A1114 10 x 16 inch Air Cleaner Cell

FC37A1130 12.5 x 16 inch Air Cleaner Cell

203365A Conversion Kit for Changing 120V Power Supply to 240V.

50000293-001 High air flow media post-filter for EAC, 16 x 10 (optional)

50000293-002 High air flow media post-filter for EAC, 16 x 12.5 (optional)

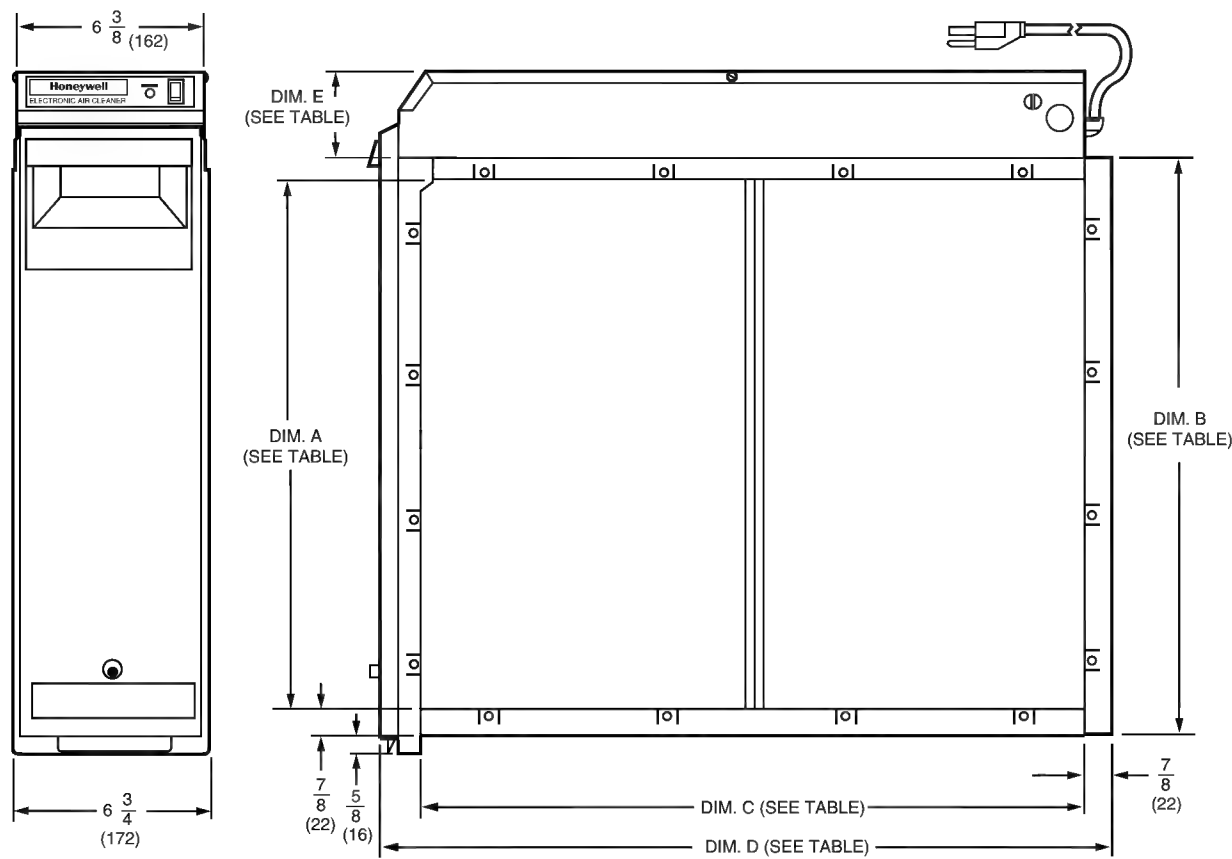
50000293-003 High air flow media post-filter for EAC, 20 x 10 (optional)

50000293-004 High air flow media post-filter for EAC, 20 x 12.5 (optional)

	Product Number	Dimensions, Approximate	Electrical Ratings	Airflow Maximum Capacity	
				(cfm)	(m ³ /hr)
*	F50F1032	20 in. x 20 in. (508 mm x 508 mm)	120 Vac, 60 Hz, 0.4A max.	1400 cfm	2380 m ³ /hr
*	F50F1040	20 in. x 12 1/2 in. (508 mm x 318 mm)	120 Vac, 60 Hz, 0.4A max.	1000 cfm	1700 m ³ /hr
*	F50F1057	20 in. x 12 1/2 in. (508 mm x 318 mm)	240 Vac, 60 Hz, 0.2A max.	1000 cfm	1700 m ³ /hr
*	F50F1065	20 in. x 25 in. (508 mm x 635 mm)	120 Vac, 60 Hz, 0.4A max.	2000 cfm	3400 m ³ /hr
*	F50F1073	16 in. x 25 in. (406 mm x 635 mm)	120 Vac, 60 Hz, 0.4A max.	1400 cfm	2380 m ³ /hr
*	F50F1149	16 in. x 20 in. (406 mm x 508 mm)	120 Vac, 60 Hz, 0.4A max.	1200 cfm	2040 m ³ /hr
* TRADELINE models • SUPER TRADELINE models					

Electronic Air Cleaner—Residential

Dimension Diagrams

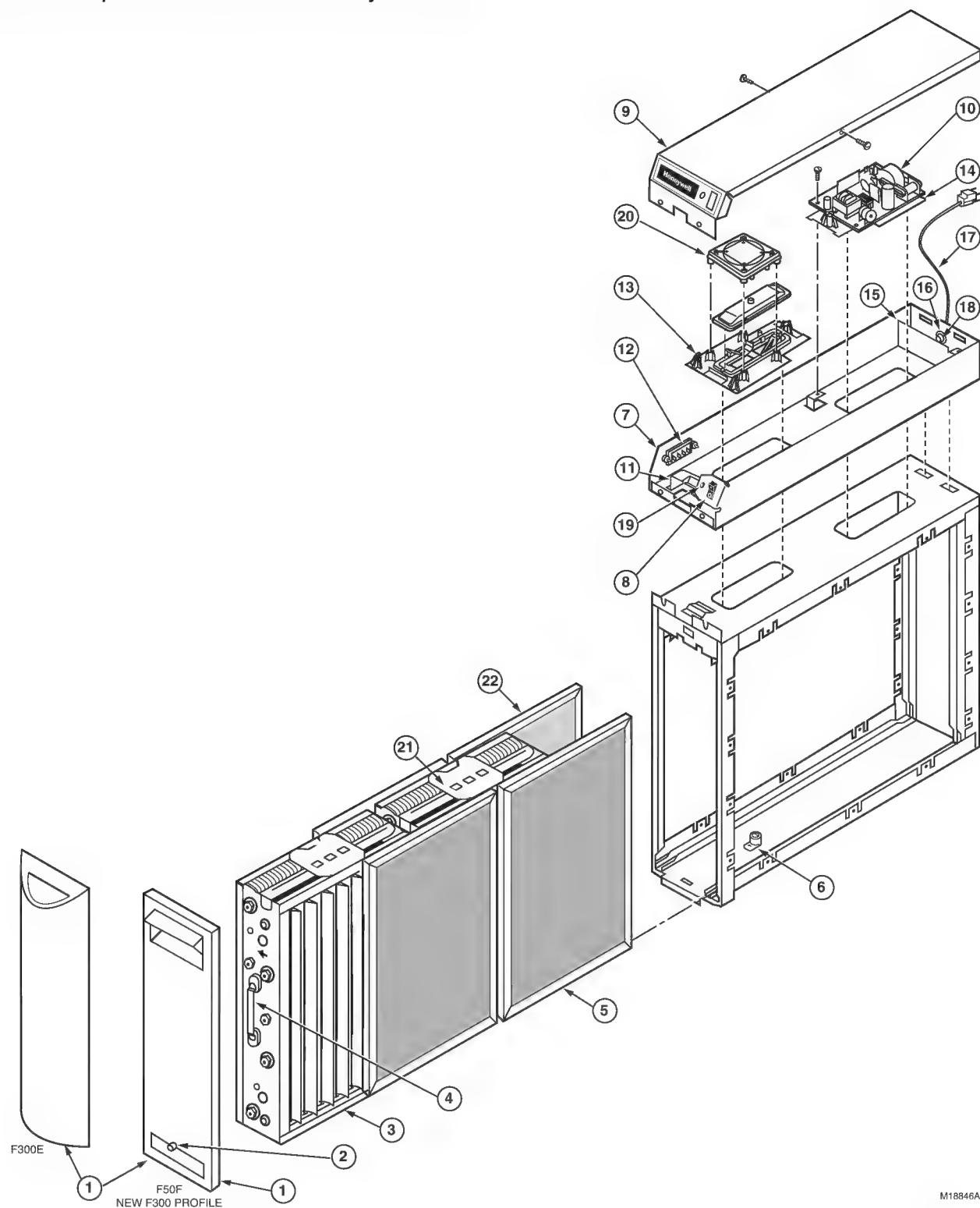


F50F SIZE		DIM. A		DIM. B		DIM. C		DIM. D		DIM. E	
IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
16 X 25	406 X 635	14 7/16	367	16 3/16	411	23 1/4	591	25 1/2	648	2 3/4	70
16 X 20	406 X 508	14 7/16	367	16 3/16	411	18 1/4	457	20 1/2	521	2 3/4	70
20 X 25	508 X 635	18 7/16	468	20 3/16	513	23 1/4	591	25 1/2	648	2 3/4	70
20 X 20	508 X 508	18 7/16	468	20 3/16	513	18 1/4	457	20 1/2	521	2 3/4	70
20 X 12 1/2	508 X 318	18 7/16	468	20 3/16	513	10 7/8	276	13 1/8	333	3 5/8	92

M2872A

Electronic Air Cleaner—Residential

F50F and F300 Exploded View. Part Numbers are keyed to Parts List



M18846A

F50F and F300E Parts List

No.	Description	Nominal Return Air Opening				
		16 x 20 in. (406 x 508 mm)	16 x 25 in. (406 x 635 mm)	20 x 12-1/2 in. (508 x 318 mm)	20 x 20 in. (508 x 508 mm)	20 x 25 in. (508 x 635 mm)
1	F50 Access Door includes No. 2	203306AB (1)	203306AB (1)	203305AB (1)	203305AB (1)	203305AB (1)
1	F300 New Profile Door includes No. 2	32007528-003	32007528-003	N/A	32007528-002	32007528-002
2	Test Button Assembly	137980A (1)	137980A (1)	137980A (1)	137980 (1)	137980A (1)
3	Electronic Cell	FC37A1114 (2)	FC37A1130 (2)	FC37A1064 (1)	FC37A1049 (2)	FC37A1064 (2)
4	Cell Handle	137266 (2)	137266 (2)	137266 (1)	137266 (2)	137266 (2)
5	Prefilter	209989 (2)	203371 (2)	203372 (1)	203373(2)	203372 (2)
6	Cell Key	136518 (1)	136518 (1)	136518 (1)	136518 (1)	136518 (1)
7	F50 Power Box Assembly Series One ^a . Includes No. 8-20, 120V, 60 Hz. Brown Cover.	208418G ^c (1)	208417Q ^c (1)	208419D (1)	208418F ^c (1)	208417Q ^c (1)
	240V, 60 Hz ^c			208419B (1)		
7	F300 Power Box Assembly Series Two ^b . Includes No. 8-20, 120V, 60 Hz. White Cover.	208418J (1)	208417S (1)	N/A	208418H (1)	208417R (1)
	240V, 60 Hz ^c					
8	Switch	203321 (1)	203321 (1)	203321 (1)	203321 (1)	203321 (1)
9	F300 Power Box Cover and Label, White	32004930-002	32004930-001	N/A	32004930-002	32004930-001
9	F50 Power Box Cover and Label, Brown	203319A (1)	203318A (1)	203320A (1)	203319A (1)	203318A (1)
10	F50 and F300 Power Supply, Series Two ^b . 120V, 60 Hz	208045J (1)	208045G (1)	208045G (1)	208045G (1)	208045G (1)
	240V, 60 Hz	N/A ^c	N/A ^c	208410C (1)	N/A ^c	N/A ^c
11	Interlock Bracket and Switch	4074ETG (1)	4074ETG (1)	4074ETG (1)	4074ETG (1)	4074ETG (1)
12	W8600 Terminal Strip	Supplied with W8600F				
13	Terminal Board Assembly Front	203329B (1)	203329B (1)	203329D (1)	203329C (1)	203329B (1)
14	Terminal Board Assembly Rear	203329A (1)	203329A (1)	N/A	203329A (1)	203329A (1)
15	Barrier Plate	203331 (1)	203331 (1)	203331 (1)	203331 (1)	203331 (1)
16	Strain Relief	203852 (1)	203852 (1)	203852 (1)	203852 (1)	203852 (1)
17	Line Cord	4074ETD (1)	4074ETD (1)	4074ETD (1)	4074ETD (1)	4074ETD (1)
18	Hole Plug	203847 (1)	203847 (1)	203847 (1)	203847 (1)	203847 (1)
19	Neon Assembly	4074EYS (1)	4074EYS (1)	4074EYT (1)	4074EYS(1)	4074EYS (1)
20	Airflow Switch, pin connection	4074ETH (1)	4074ETH (1)	4074ETJ (1)	4074ETH (1)	4074ETH (1)
20	Airflow Switch, plug connection	4074EZB (1)	4074EZB (1)	N/A	4074EZB (1)	4074EZB (1)
21	FC37A Bag Assembly for cell repair. Contains 2 Connector Clips, 1 Terminal Board and Instructions.	4074EHG	4074EHG	4074EHG	4074EHG	4074EHG
22	Post Filter (not included with F50)	50000293-001	50000293-002	50000293-004	50000293-003	50000293-004

^a Series One compatible with W8600E and W8600F.

^b Series Two compatible with W8600F only.

^c Use 203365A Conversion Kit for changing 120V, 60Hz model to 240V, 60 Hz.

(#) = Quantity required per unit

N/A = Not available as merchandised part.

Parts and Accessories Not Illustrated

Description	Nominal Return Air Opening				
	16 x 20 in. (406 x 508 mm)	16 x 25 in. (406 x 635 mm)	20 x 12-1/2 in. (508 x 318 mm)	20 x 20 in. (508 x 508 mm)	20 x 25 in. (508 x 635 mm)
Air Cleaner Cabinet Gasket Kit	32002109-001	32002109-001	32002109-001	32002109-001	32002109-001
Ionizer Wires (multiples of 5)	136434BA	136434BA	136434AA	136434AA	136434AA
Mounting Screws	136375 (6)	136375 (6)	136375 (6)	136375 (6)	136375 (6)
Premier White® AIRWATCH® Indicator	W8600A1007	W8600A1007	—	W8600A1007	W8600A1007
Air Cleaner Monitor (beige color)	W8600F1006	W8600F1006	W8600F1006	W8600F1006	W8600F1006
Premier White® Air Cleaner Monitor	W8600F1014	W8600F1014	W8600F1014	W8600F1014	W8600F1014
2-Stage EAC Cell with Collector Clip	N/A	FC37A1247 (2)	—	N/A	FC37A1239 (2)
240V Conversion Kit	203365A	203365A	N/A	203365A	203365A
Power Box Gasket Kit. Must be ordered in multiples of 6.	210049* (1)	210049* (1)	210049* (1)	210049* (1)	210049* (1)

(#) = Quantity required per unit

N/A = Not available as merchandised part.

Electronic Air Cleaner—Residential

F52 Return Grille Electronic Air Cleaner



For wall or ceiling mounting in return air duct of a central forced air heating, cooling, or ventilating system.

- Removes airborne particles from the air circulated through it.
- Electronic cells can be washed easily.
- Neon light shows that air cleaner is operating.
- Wiring consists of simply connecting air cleaner to power source.
- Solid state power supply is energized by an airflow switch; no interconnection to the fan system is required.
- Solid state power supply is self-regulating and maintains peak efficiency during a wide range of cell dirt loading conditions.
- Automatic interlock switch disconnects power when unit is opened.
- Use with optional W8600F Electronic Air Cleaner Monitor (ordered separately) to monitor air cleaner performance.

Air Cleaner Type: Electronic Air Cleaner

Application: Return Grill

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999.

Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=73%, E2=88%, E3=95%

Static Pressure Drop (in. w.c.): 0.2 at max flow

Approvals: Underwriters Laboratories Inc. Listed. Canadian Standards Association Certified.

Replacement Parts:

136434AA 20 in. replacement Ionizer wire for F50A, F50E, F50F, F52F

190912A Contact Board, F52C,D,E,F

32001438-004 F52F Egg Crate Grille. F52F1048, F52F1006.

32001438-005 F52F Egg Crate Grille. F52F1055, F52F1014.

4074EHG FC37A Terminal Board Repair Kit. Contains 2 Connector Clips, 1 Terminal Board and Instruction Sheet.

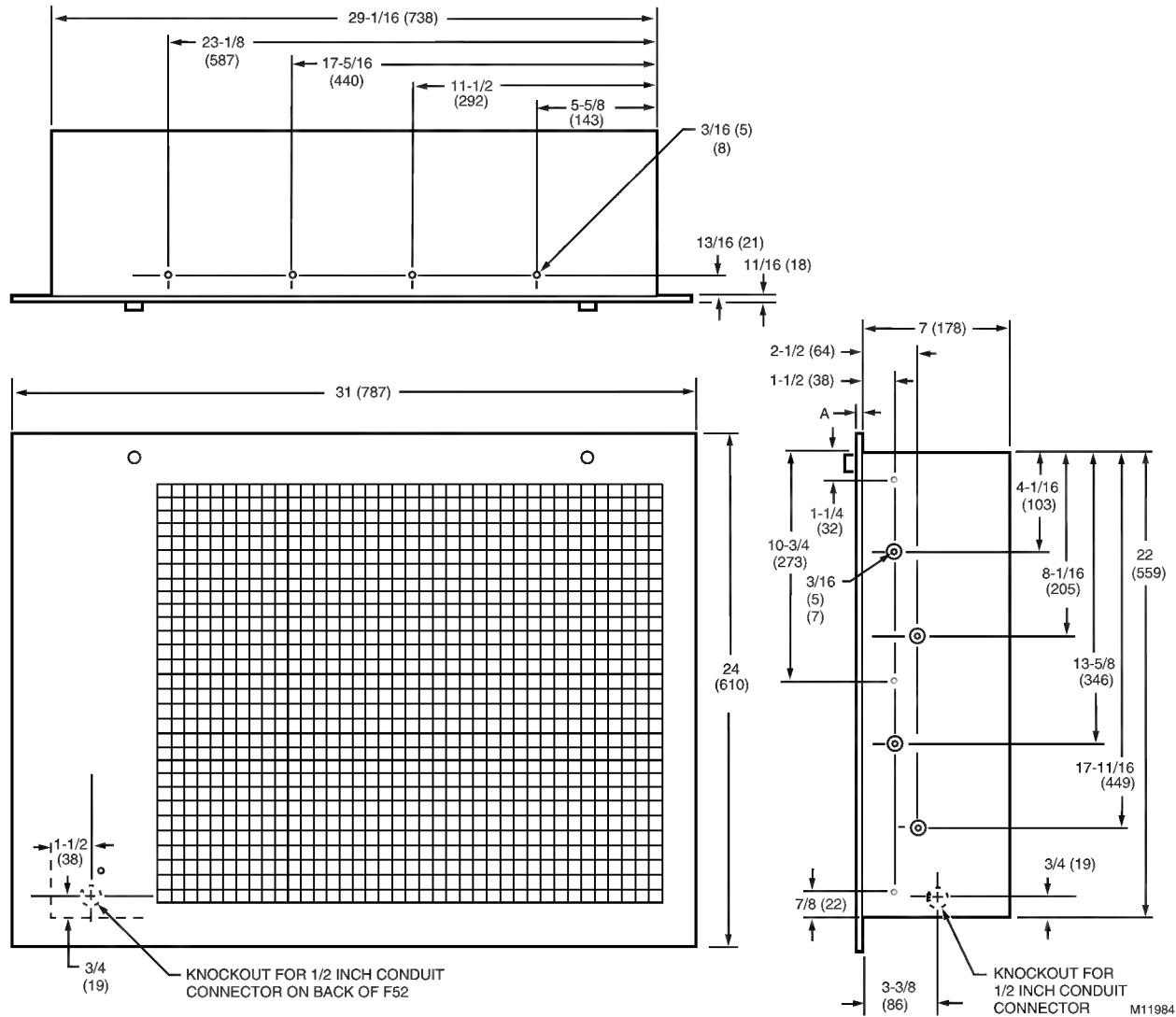
4074ETE F50F, F52F Neon Light Assembly Includes Lens and Wire Tie. 16 x 25, 20 x 20, 20 x 25

4074ETH Air Flow Switch Bag Assembly, with pin connections

FC37A1171 12.5 x 20 inch Air Cleaner Cell

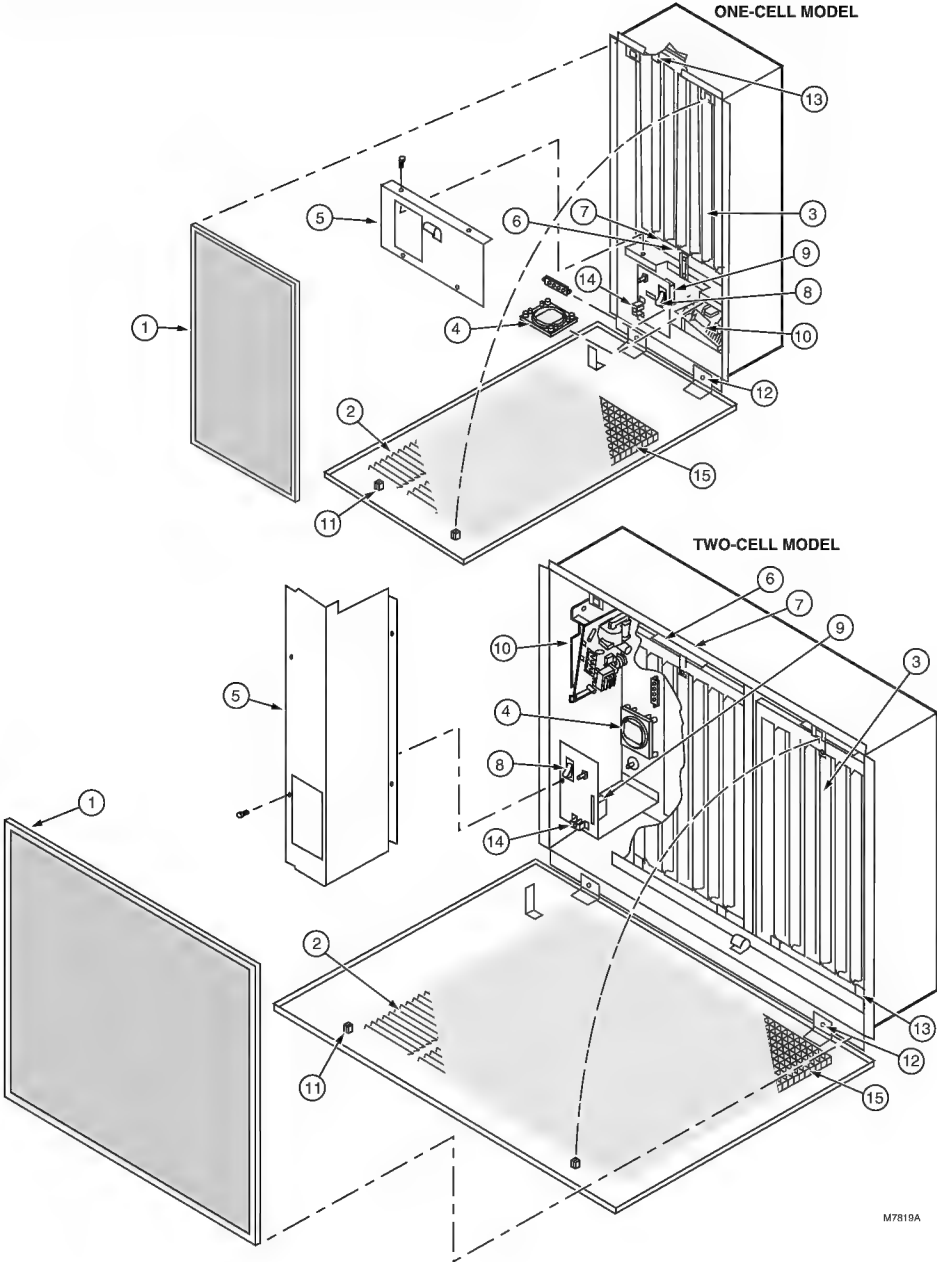
	Product Number	Dimensions, Approximate	Electrical Ratings	Airflow Maximum Capacity	
				(cfm)	(m ³ /hr)
*	F52F1048	20 in. x 12 1/2 in. (508 mm x 318 mm)	120 Vac, 60 Hz, 0.4A max.	1000 cfm	1700 m ³ /hr
*	F52F1055	20 in. x 25 in. (508 mm x 635 mm)	120 Vac, 60 Hz, 0.4A max.	2000 cfm	3400 m ³ /hr
* TRADELINE models • SUPER TRADELINE models					

Dimension Diagrams



Electronic Air Cleaner—Residential

F52F Exploded View. Part Numbers are keyed to Parts List.



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F52F Parts List

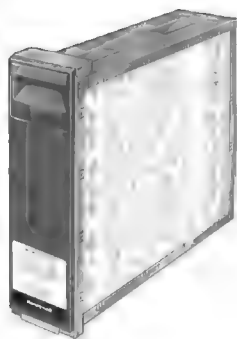
No.	Description	Part Number	
		120 Vac Model	
		F52F1048 1-Cell	F52F1055 2-Cell
1	Prefilter	208536	208537
2	Door/Grille (Egg Crate)	32001438-004	32001438-005
3	Electronic Cell	FC37A1171	FC37A1171 (2)
4	Air Flow Switch	4074EVB	4074EVB
5	Power Supply Enclosure	208541	208542
6	Cell Contact Board	4074EHG	4074EHG (2)
7	Cabinet Contact Board	190912A	190912A (2)
8	On/Off Switch	203321	203321
9	Interlock Switch	208543	208543
10	Power Supply compatible with W8600E and W8600F	208427J	208427AA
11	Plastic Door Latch	207631 (2)	207631 (2)
12	Hex Nut for Door Hinge	208545 (2) N/A	208545 (2) N/A
13	Metal Cell Hook	196123 (2)	196123 (4)
14	Neon Lamp Assembly	4074ETE	4074ETE
15	Door/Grille (Egg Crate)	32001438-004	32001438-005

Parts and Accessories not Illustrated

Description	Part Number
	120 Vac Model
Cell Handle	137266
Ionizer Wires (Must be ordered in multiples of 5.)	136434AA (9/cell)
Air Cleaner Monitor, Taupe	W8600F1006*
Air Cleaner Monitor, Premier White®	W8600F1014*

Media Air Cleaner—Residential

F100 Media Air Cleaner



The F100 Media Air Cleaner captures a significant amount of the air-borne particles from the air circulated through the unit. Recommended as the basic minimum air quality product. The F100F Media Air Cleaner includes cabinet, access door and FC100A pleated media filter; W8600A Airwatch Indicator (optional on some models).

- High efficiency media filter captures particles as small as 0.3 microns.
- Applicable to all gas, oil and electric forced air furnaces and to compressor cooling up to 5 tons.
- Mounts in the return air duct.
- Rugged zinc-coated, roll-formed cabinet resists corrosion and can support weight of residential furnace and evaporator coil.
- Requires no electrical connections.
- Mounts in any position.
- Requires no maintenance except periodic media filter replacement.
- Quick and easy media filter replacement.
- Later upgrade to higher performing media or electronic air cleaner is easy.

Air Cleaner Type: Media Air Cleaner

Application: Duct mounted

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=22%, E2=53%, E3=78%

Minimum Efficiency Reporting Value: MERV 8

Static Pressure Drop (in. w.c.): 0.25

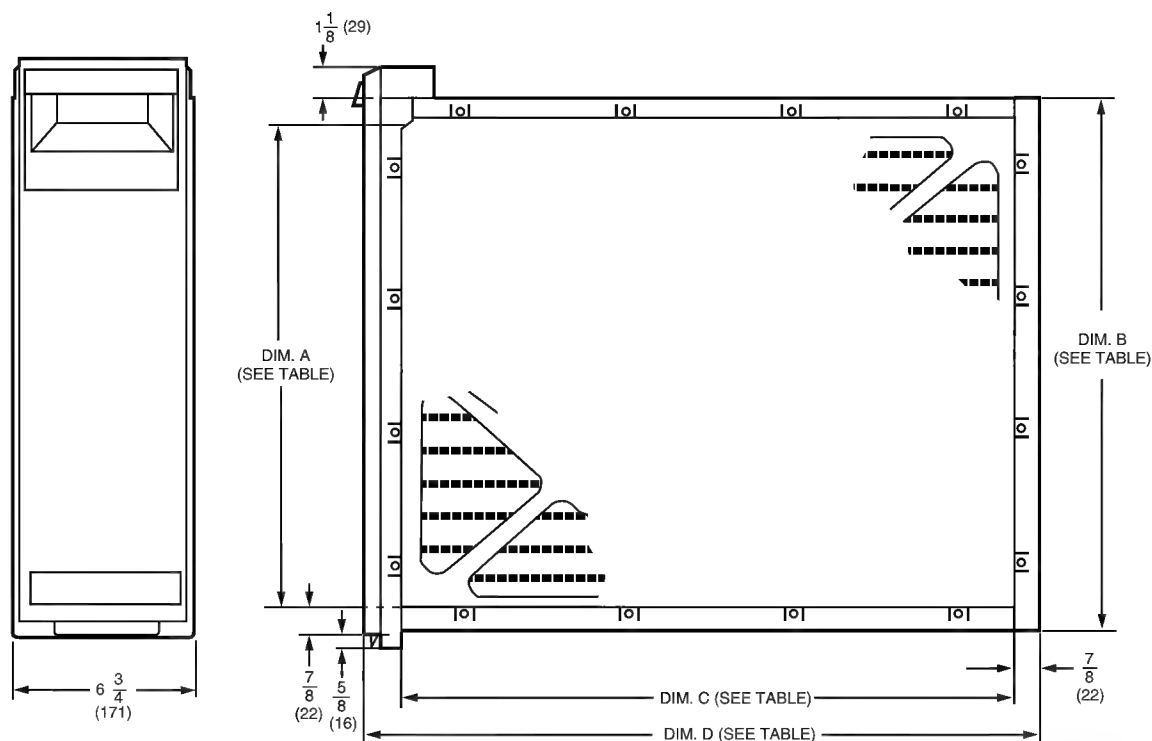
Approvals: Filter Element: UL Listed, UL900, Class 2

	Product Number	Dimensions, Approximate	Airflow Maximum Capacity		Replacement Filters	Additional Features
			(cfm)	(m ³ /hr)		
*	F100B1008	16 in. x 20 in. (406 mm x 508 mm)	1200 cfm	2040 m ³ /hr	FC100A1003, FC200E1003	Media air cleaner boot. Does not include FC100A filter or AIRWATCH indicator.
*	F100B1016	16 in. x 25 in. (406 mm x 635 mm)	1400 cfm	2380 m ³ /hr	FC100A1029, FC100C1009, FC200E1029	Media air cleaner boot. Does not include FC100A filter or AIRWATCH indicator.
*	F100B1024	20 in. x 20 in. (508 mm x 508 mm)	1400 cfm	2380 m ³ /hr	FC100A1011, FC200E1011	Media air cleaner boot. Does not include FC100A filter or AIRWATCH indicator.
*	F100B1032	20 in. x 25 in. (508 mm x 635 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC100C1017, FC200E1037	Media air cleaner boot. Does not include FC100A filter or AIRWATCH indicator.
*	F100B1040	25 in. x 22 in. (635 mm x 559 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC200E1037	Media air cleaner boot. Does not include FC100A filter or AIRWATCH indicator. 25 inch door. Not upgradeable to EAC. Sized to fit most 3, 3.5, 4 and 5 ton air handlers from Carrier, Bryant, Rheem, York & ICP.
*	F100F1004	16 in. x 20 in. (406 mm x 508 mm)	1200 cfm	2040 m ³ /hr	FC100A1003, FC200E1003	Includes FC100A filter and AIRWATCH indicator.
*	F100F1012	16 in. x 25 in. (406 mm x 635 mm)	1400 cfm	2380 m ³ /hr	FC100A1029, FC100C1009, FC200E1029	Includes FC100A filter and AIRWATCH indicator.
*	F100F1020	20 in. x 20 in. (508 mm x 508 mm)	1400 cfm	2380 m ³ /hr	FC100A1011, FC200E1011	Includes FC100A filter and AIRWATCH indicator.
*	F100F1038	20 in. x 25 in. (508 mm x 635 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC100C1017, FC200E1037	Includes FC100A filter and AIRWATCH indicator.
*	F100F1087	25 in. x 20 in. (635 mm x 508 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC200E1037	Includes FC100A filter and AIRWATCH indicator. 25 inch door. Not upgradeable to EAC. Sized to fit most 3, 3.5, 4 and 5 ton air handlers from TRANE.
*	F100F1095	25 in. x 22 in. (635 mm x 559 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC200E1037	Includes FC100A filter and AIRWATCH indicator. 25 inch door. Not upgradeable to EAC. Sized to fit most 3, 3.5, 4 and 5 ton air handlers from Carrier, Bryant, Rheem, York & ICP.
*	F100F2002	16 in. x 25 in. (406 mm x 635 mm)	1400 cfm	2380 m ³ /hr	FC100A1029, FC100C1009, FC200E1029	Includes FC100A filter. No AIRWATCH indicator.
*	F100F2010	20 in. x 25 in. (508 mm x 635 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC100C1017, FC200E1037	Includes FC100A filter. No AIRWATCH indicator.
* TRADELINE models • SUPER TRADELINE models						

Media Air Cleaner—Residential

	Product Number	Dimensions, Approximate	Airflow Maximum Capacity		Replacement Filters	Additional Features
			(cfm)	(m³/hr)		
*	F100F2028	16 in. x 20 in. (406 mm x 508 mm)	1200 cfm	2040 m³/hr	FC100A1003, FC200E1003	Includes FC100A filter. No AIRWATCH indicator.
*	F100F2036	20 in. x 20 in. (508 mm x 508 mm)	1400 cfm	2380 m³/hr	FC100A1011, FC200E1011	Includes FC100A filter. No AIRWATCH indicator.
*	F100F2044	25 in. x 20 in. (635 mm x 508 mm)	2000 cfm	3400 m³/hr	FC100A1037, FC200E1037	Includes FC100A filter. No AIRWATCH indicator. 25 inch door. Not upgradeable to EAC. Sized to fit most 3, 3.5, 4 and 5 ton air handlers from TRANE.
*	F100F2051	25 in. x 22 in. (635 mm x 559 mm)	2000 cfm	3400 m³/hr	FC100A1037, FC200E1037	Includes FC100A filter. No AIRWATCH indicator. 25 inch door. Not upgradeable to EAC. Sized to fit most 3, 3.5, 4 and 5 ton air handlers from Carrier, Bryant, Rheem, York & ICP.
* TRADELINE models • SUPER TRADELINE models						

Dimension Diagrams



F100 SIZE		DIM. A		DIM. B		DIM. C		DIM. D	
IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
16 X 25	406 X 635	14 7/16	367	16 3/16	411	23 1/4	591	25 1/2	648
16 X 20	406 X 508	14 7/16	367	16 3/16	411	18 1/4	457	20 1/2	521
20 X 25	508 X 635	18 7/16	468	20 3/16	513	23 1/4	591	25 1/2	648
20 X 20	508 X 508	18 7/16	468	20 3/16	513	18 1/4	457	20 1/2	521
20 X 12 1/2	508 X 318	18 7/16	468	20 3/16	513	10 7/8	276	13 1/8	333
25 X 20	635 X 508	23 5/16	592	25 1/8	638	18 3/8	467	20 5/8	524
25 X 22	635 X 559	23 5/16	592	25 1/8	638	20 1/4	514	22 1/2	572

F100 Parts List

	F100F2028 F100F1004 F100B1008 16 x 20 in.	F100F2002 F100F1012 F100B1016 16 x 25 in.	F100F2036 F100F1020 F100B1024 20 x 20 in.	F100F2010 F100F1038 F100B1032 20 x 25 in.	F100F2044 F100F1084 F100B1084 25 x 20 in.	F100F2051 F100F1095 F100B1040 25 x 22 in.
Replacement Filter, MERV 8	FC100A1003	FC100A1029	FC100A1011	FC100A1037	FC100A1037	FC100A1037
Replacement Filter, MERV 8, collapsible	N/A	FC100C1009	N/A	FC100C1017	—	—
Replacement Filter, MERV 11	FC200E1003	FC200E1029	FC200E1011	FC200E1037	FC200E1037	FC200E1037
Replacement Door	203306AH	203306AH	203305AH	203305AH	32007528-001	32007528-001
AIRWATCH® Indicator	W8600A1007	W8600A1007	W8600A1007	W8600A1007	W8600A1007	W8600A1007

Media Air Cleaner—Residential

F150 Enviracaire Elite Media Air Cleaner



The F150E Media Air Cleaner captures a significant amount of the air-borne particles from the air circulated through the unit. Recommended as the basic minimum air quality product.

The F150E Media Air Cleaner includes cabinet, access door and FC100A pleated media filter, and W8600A Airwatch Indicator.

- W8600A AIRWATCH filter change indicator.
- High efficiency media filter captures particles as small as 0.3 microns.
- Applicable to all gas, oil and electric forced air furnaces and to compressor cooling up to 5 tons.
- Mounts in the return air duct.
- Rugged zinc-coated, roll-formed cabinet resists corrosion and can support weight of residential furnace and evaporator coil.
- Requires no electrical connections.
- Mounts in any position.
- Requires no maintenance except periodic media filter replacement.
- Quick and easy media filter replacement.
- Later upgrade to higher performing media or electronic air cleaner is easy.

Air Cleaner Type: Media Air Cleaner

Application: Duct mounted

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=22%, E2=53%, E3=78%

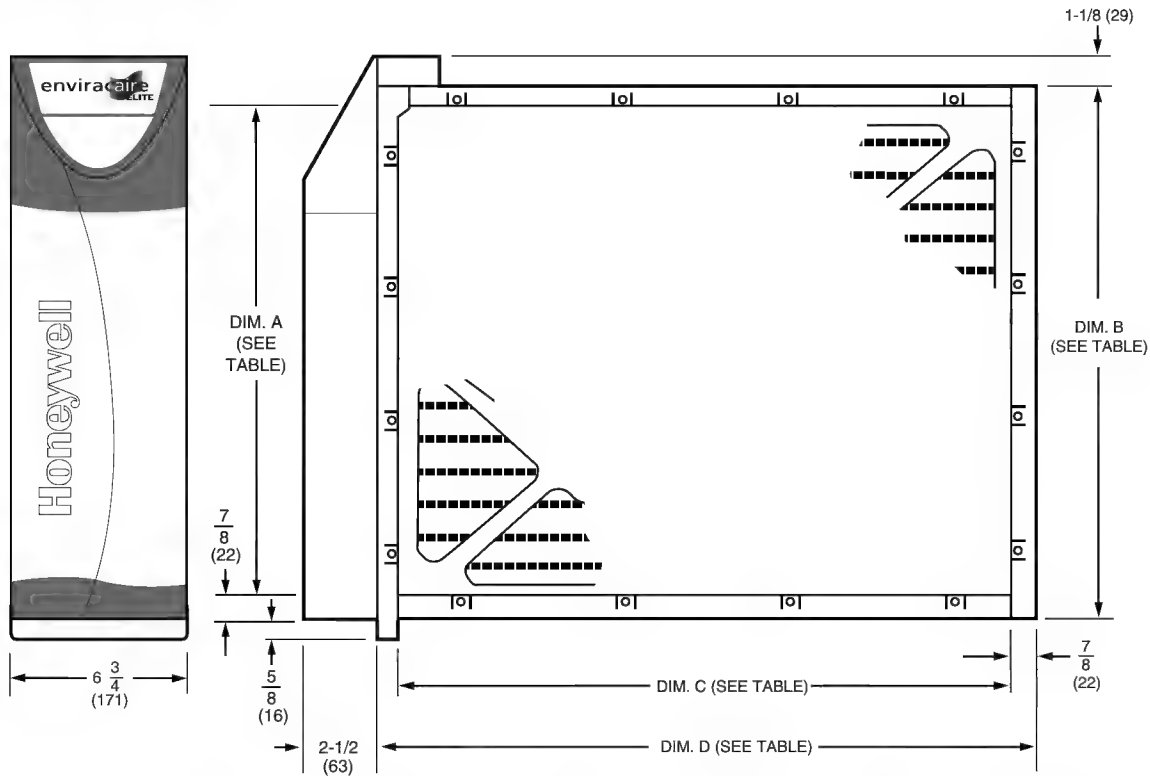
Minimum Efficiency Reporting Value: MERV 8

Static Pressure Drop (in. w.c.): 0.25

Approvals: Filter Element: UL Listed, UL900, Class 2

	Product Number	Dimensions, Approximate	Airflow Maximum Capacity		Replacement Filters	Additional Features
			(cfm)	(m ³ /hr)		
*	F150E1000	16 in. x 20 in. (406 mm x 508 mm)	1200 cfm	2040 m ³ /hr	FC100A1003, FC200E1003	Includes FC100A filter and AIRWATCH indicator.
*	F150E1018	20 in. x 20 in. (508 mm x 508 mm)	1400 cfm	2380 m ³ /hr	FC100A1011, FC200E1011	Includes FC100A filter and AIRWATCH indicator.
*	F150E1026	16 in. x 25 in. (406 mm x 635 mm)	1400 cfm	2380 m ³ /hr	FC100A1029, FC100C1009, FC200E1029	Includes FC100A filter and AIRWATCH indicator.
*	F150E1034	20 in. x 25 in. (508 mm x 635 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC100C1017, FC200E1037	Includes FC100A filter and AIRWATCH indicator.
* TRADELINE models • SUPER TRADELINE models						

Dimension Diagrams



PRODUCT OS NUMBER	F150E SIZE		DIM. A		DIM. B		DIM. C		DIM. D	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
F150E 1034	20 X 25	508 X 635	18 7/16	468	20 3/16	513	23 1/4	591	25	648
F150E 1018	20 X 20	508 X 508	18 7/16	468	20 3/16	513	18 1/4	457	20	521
F150E 1026	16 X 25	406 X 635	14 7/16	367	16 3/16	411	23 1/4	591	25	648
F150E 1000	16 X 20	406 X 508	14 7/16	367	16 3/16	411	18 1/4	457	20	521

M14825

F150E Parts List

Description	F150E1000 16 x 20 in.	F150E1026 16 x 25 in.	F150E1018 20 x 20 in.	F150E1034 20 x 25 in.
Replacement Filter, MERV 8	FC100A1003	FC100A1029	FC100A1011	FC100A1037
Replacement Filter, MERV 8, collapsible	N/A	FC100C1009	N/A	FC100C1017
Replacement Filter, MERV 11	FC200E1003	FC200E1029	FC200E1011	FC200E1037
Replacement Door	32004876-006	32004876-006	32004876-005	32004876-005
AIRWATCH®	W8600A1007	W8600A1007	W8600A1007	W8600A1007

Media Air Cleaner—Residential

F200 Enviracaire Elite Media Air Cleaner



The F200E Media Air Cleaner captures a significant amount of the air-borne particles from the air circulated through the unit. Recommended high efficiency media air quality product.

The F200E Media Air Cleaner includes cabinet, access door and FC200E pleated media filter, and W8600B RF Airwatch Indicator.

- W8600B RF AIRWATCH filter change indicator included.
- Integral pressure sensors signal when filter change is required based on increased pressure drop threshold at filter.
- Filter change status is transmitted to wall-mounted RF AIRWATCH Indicator.
- High efficiency charged-media filter captures particles as small as 0.3 microns.
- Applicable to all gas, oil and electric forced air furnaces and to compressor cooling up to 5 tons.
- Mounts in the return air duct.
- Rugged zinc-coated, roll-formed cabinet resists corrosion and can support weight of residential furnace and evaporator coil.
- Requires no electrical connections.
- Mounts in any position.
- Requires no maintenance except periodic media filter replacement.
- Quick and easy media filter replacement.
- Later upgrade to higher performing media or electronic air cleaner is easy.

Air Cleaner Type: Media Air Cleaner

Application: Duct mounted

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=47%, E2=78%, E3=92%

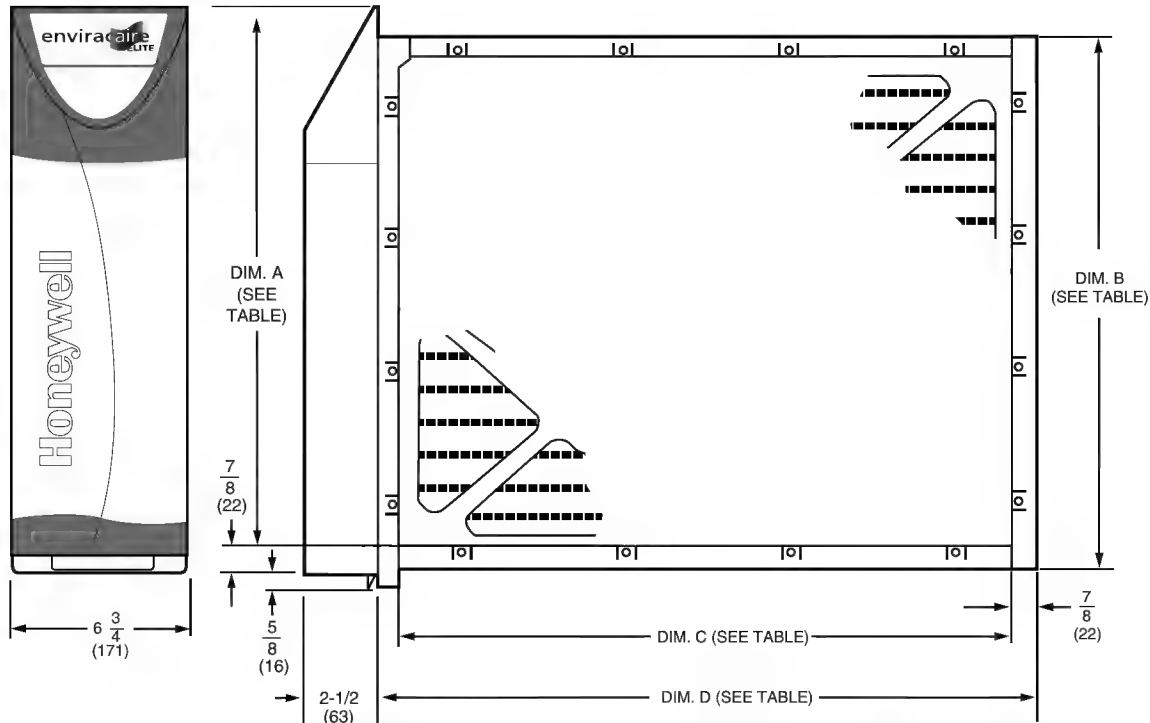
Minimum Efficiency Reporting Value: MERV 11

Static Pressure Drop (in. w.c.): 0.35

Approvals: Filter Element: UL Listed, UL900, Class 2

	Product Number	Dimensions, Approximate	Airflow Maximum Capacity		Replacement Filters	Additional Features
			(cfm)	(m ³ /hr)		
*	F200E1003	16 in. x 20 in. (406 mm x 508 mm)	1200 cfm	2040 m ³ /hr	FC100A1003, FC200E1003	Includes FC200E high efficiency filter, pressure sensor and RF AIRWATCH indicator.
*	F200E1011	20 in. x 20 in. (508 mm x 508 mm)	1400 cfm	2380 m ³ /hr	FC100A1011, FC200E1011	Includes FC200E high efficiency filter, pressure sensor and RF AIRWATCH indicator.
*	F200E1029	16 in. x 25 in. (406 mm x 635 mm)	1400 cfm	2380 m ³ /hr	FC100A1029, FC100C1009, FC200E1029	Includes FC200E high efficiency filter, pressure sensor and RF AIRWATCH indicator.
*	F200E1037	20 in. x 25 in. (508 mm x 635 mm)	2000 cfm	3400 m ³ /hr	FC100A1037, FC100C1017, FC200E1037	Includes FC200E high efficiency filter, pressure sensor and RF AIRWATCH indicator.
* TRADELINE models • SUPER TRADELINE models						

Dimension Diagrams



F200E SIZE		DIM. A		DIM. B		DIM. C		DIM. D	
IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
16 X 25	406 X 635	14 7/16	367	16 3/16	411	23 1/4	591	25 1/2	648
16 X 20	406 X 508	14 7/16	367	16 3/16	411	18 1/4	457	20 1/2	521
20 X 25	508 X 635	18 7/16	468	20 3/16	513	23 1/4	591	25 1/2	648
20 X 20	508 X 508	18 7/16	468	20 3/16	513	18 1/4	457	20 1/2	521

M14784

F200E Parts List

Description	F200E1003 16 x 20 in.	F200E1029 16 x 25 in.	F200E1011 20 x 20 in.	F200E1037 20 x 25 in.
Replacement Filter, MERV 8	FC100A1003	FC100A1029	FC100A1011	FC100A1037
Replacement Filter, MERV 8, collapsible	N/A	FC100C1009	N/A	FC100C1017
Replacement Filter, MERV 11	FC200E1003	FC200E1029	FC200E1011	FC200E1037
Door with AIRWATCH® RF Transmitter	32004876-002	32004876-002	32004876-001	32004876-001
AIRWATCH® RF Receiver	W8600B1005	W8600B1005	W8600B1005	W8600B1005

Whole House Air Cleaner—Residential

F500 Whole House HEPA Air Cleaner



The F500 Whole House HEPA Air Cleaner connects to the return air duct of a forced air system or can be independently ducted. The HEPA filter captures 99.97% of the particles from the air that passes through the filter.

The F500 Whole House Filtration System includes HEPA filter, 2 inch pleated prefilter, carbon-odor filter and motor/blower. Isolation mounting straps and HEPA AIRWATCH Indicator are also included.

F500A: Standard cabinet for mounting in conditioned spaces.

F500B: Insulated cabinet for mounting in unconditioned spaces.

- HEPA media captures at least 99.97% of 0.3 micron particles that pass through it.
- Application for forced air systems or stand-alone.
- Power cord plugs into grounded 120 Vac electrical outlet.
- Requires no maintenance except periodic media filter replacement.
- Quiet operation.
- Quick and easy media filter replacement.
- Wall-mounted AIRWATCH Indicator (included) provides filter change reminders for each of the three filters.
- Easy installation.
- Three-filter system:
 - Activated carbon filter for odors.
 - High-efficiency pleated pre-filter extends HEPA filter life.
 - HEPA filter traps at least 99.97% of 0.3 micron particles that pass through it.
- Rugged steel cabinet.

Fractional Efficiency: 99.97% (at 0.3 microns)

Approvals: CSA

Air Cleaner Type: HEPA Air Cleaner

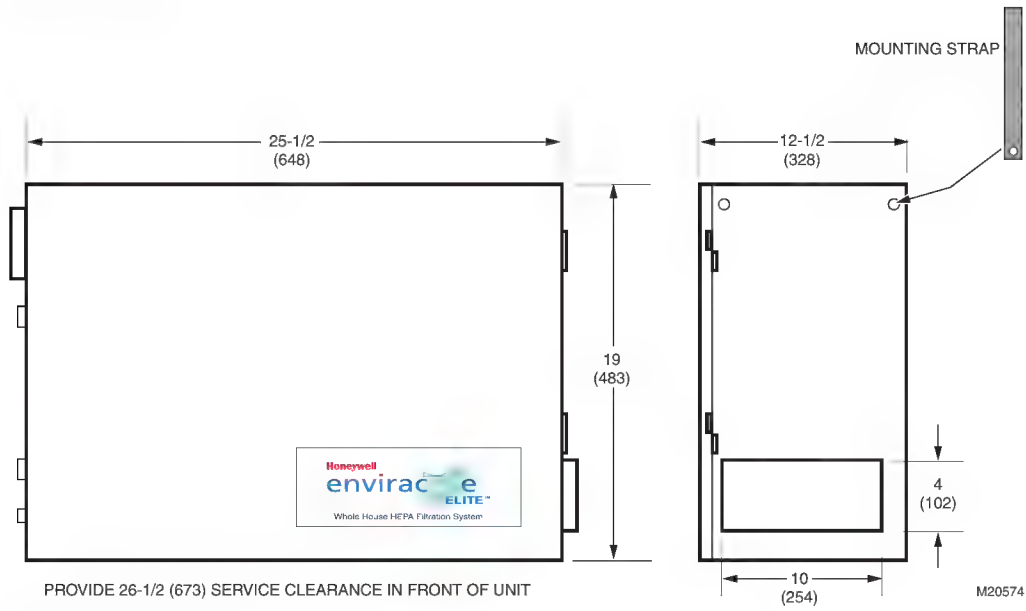
Application: Bypass, Stand Alone

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999.

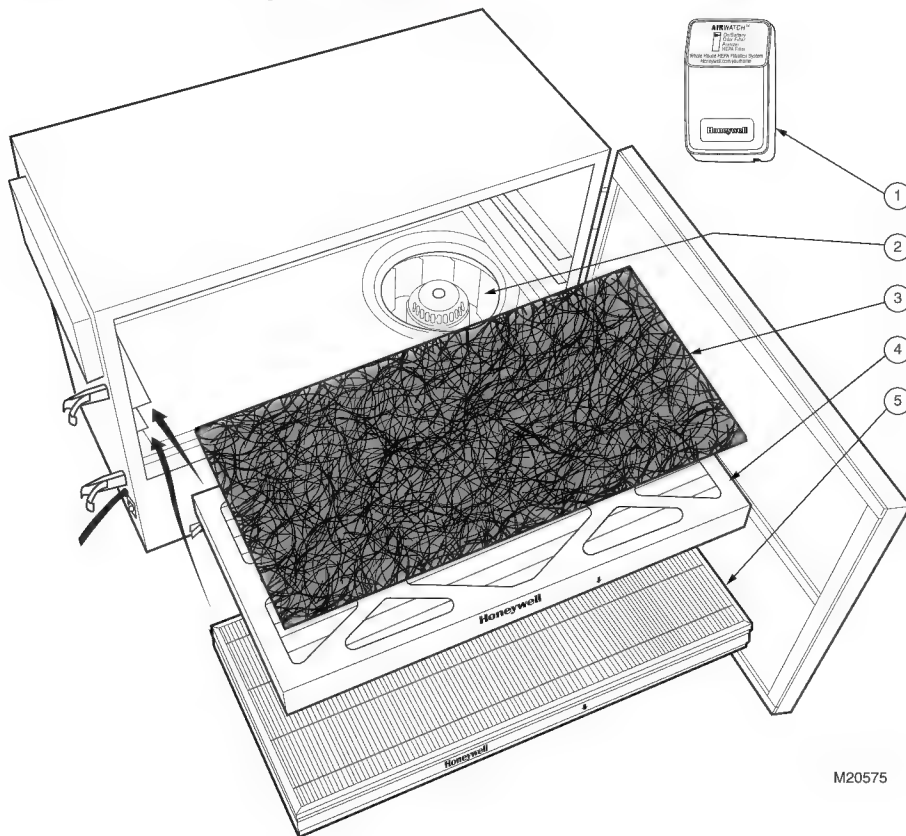
	Product Number	Electrical Ratings	Airflow Maximum Capacity		Replacement Filters	Additional Features
			(cfm)	(m ³ /hr)		
*	F500A1000	120 Vac, 60 Hz, 1.98A max.	400 cfm nominal	680 m ³ /hr nominal	32006028-001 HEPA Filter, 32006027-001 2 inch Prefilter, 32006026-001 Carbon Odor Filter (4 pack)	Includes special HEPA AIRWATCH to remind homeowner when to change odor filter, pre-filter and HEPA filter. F500A has standard cabinet for mounting in conditioned spaces.
*	F500B1009	120 Vac, 60 Hz, 1.98A max.	400 cfm nominal	680 m ³ /hr nominal	32006028-001 HEPA Filter, 32006027-001 2 inch Prefilter, 32006026-001 Carbon Odor Filter (4 pack)	Includes special HEPA AIRWATCH to remind homeowner when to change odor filter, pre-filter and HEPA filter. F500B has insulated cabinet for mounting in unconditioned spaces.
* TRADELINE models • SUPER TRADELINE models						

Whole House Air Cleaner—Residential

Dimension Diagrams



F500 Part Numbers are keyed to Parts List.

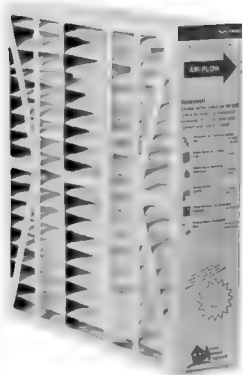


F500 Parts List.

No.	Description	Part Number
1	HEPA AIRWATCH™ Indicator	32005012-001
2	Blower Motor Assembly	32006670-001
3	Carbon-Odor Filter	32006026-001
4	Pleated Prefilter	32006027-001
5	HEPA Filter	32006028-001

Replacement Media—Residential Air Cleaners

Residential Air Cleaner Replacement Media Filter



Recommended as the basic minimum air quality product.

- Replacement filter for Honeywell F25, F27, F35, F100, F150, F200 Media Air Cleaners.

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Product Number	Dimensions, Approximate	Fractional Efficiency	Minimum Efficiency Reporting Value	Used With	Description
FC100A1003	16 in. x 20 in. (406 mm x 508 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F150E1000, F100F2028, F100F1004, F100B1008, F200E1003	Media Air Filter
FC100A1011	20 in. x 20 in. (508 mm x 508 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F150E1018, F100F2036, F100F1020, F100B1024, F200E1011	Media Air Filter
FC100A1029	16 in. x 25 in. (406 mm x 635 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F150E1026, F100F2002, F100F1012, F100B1016, F200E1029	Media Air Filter
FC100A1037	20 in. x 25 in. (508 mm x 635 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F150E1034, F100F2010, F100F1038, F100B1032, F200E1037, Spacegard 2200	Media Air Filter
FC100A1045	21 1/2 in. x 27 1/2 in. (546 mm x 699 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F27F1057	Media Air Filter
FC100A1052	20 in. x 12 1/2 in. (508 mm x 318 mm)	E1=22%, E2=53%, E3=78%	MERV 8	F27F1032	Media Air Filter
FC100C1009	16 in. x 25 in. (406 mm x 635 mm)	E1=21%, E2=51%, E3=77%	MERV 8	F200E1029, F150E1026, F100F2002, F100F1012, F100B1016, F200E1029	Collapsible filter replacement with disposable combs.
FC100C1017	20 in. x 25 in. (508 mm x 635 mm)	E1=21%, E2=51%, E3=77%	MERV 8	F200E1037, F150E1034, F100F2010, F100F1038, F100B1032, F200E1037	Collapsible filter replacement with disposable combs.
FC200E1003	16 in. x 20 in. (406 mm x 508 mm)	E1=47%, E2=78%, E3=92%	MERV 11	F200E1003, F150E1000, F100F2028, F100F1004, F100B1008	Charged-Media Filter
FC200E1011	20 in. x 20 in. (508 mm x 508 mm)	E1=47%, E2=78%, E3=92%	MERV 11	F200E1011, F150E1018, F100F2036, F100F1020, F100B1024	Charged-Media Filter
FC200E1029	16 in. x 25 in. (406 mm x 635 mm)	E1=47%, E2=78%, E3=92%	MERV 11	F200E1029, F150E1026, F100F2002, F100F1012, F100B1016	Charged-Media Filter
FC200E1037	20 in. x 25 in. (508 mm x 635 mm)	E1=47%, E2=78%, E3=92%	MERV 11	F100B1032, F100F1038, F100F2010, F150E1034, F200E1037, Spacegard 2200	Charged-Media Filter
* FC2200A1009	—	E1=32%, E2=66%, E3=95%	MERV 11	—	Replacement filter for SpaceGard model 2200
* FC2400A1005	—	E1=32%, E2=66%, E3=95%	MERV 11	—	Replacement filter for SpaceGard model 2200, Replacement filter for SpaceGard model 2400

* TRADELINE models • SUPER TRADELINE models

Replacement Media—Residential Air Cleaners

FC40R Return Grille Media Air Filter



Provides high efficiency, long life alternative to one inch filter. It captures a significant amount of the airborne particles in the air that circulates through the filter.

- Mounts in most return filter grilles. Pleated for greater media capacity. Low pressure drop provides a comfortable air flow. Maintains equipment efficiency longer than standard filters.

Air Cleaner Type: Media Air Cleaner

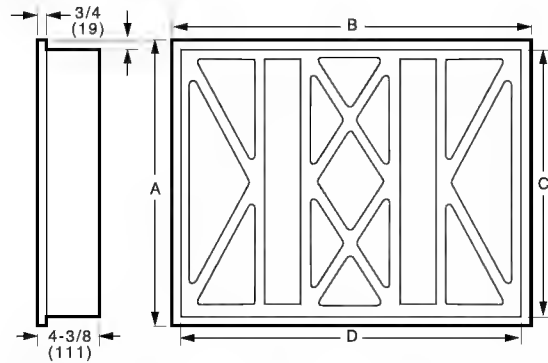
Application: Return Grill

Efficiency Standard: Efficiency ratings are based on American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-1999. Efficiency ranges are defined for small particles, E1=0.3 to 1.0 microns; medium particles, E2=1.0 to 3.0 microns; and large particles, E3=3.0 to 10.0 microns.

Fractional Efficiency: E1=22%, E2=53%, E3=78%

Minimum Efficiency Reporting Value: MERV 8

Dimension Diagrams



Dimensions in. (mm)	Dim A in. (mm)	Dim B in. (mm)	Dim C in. (mm)	Dim D in. (mm)
20 X 20 (508 x 508)	19-3/4 (502)	19-3/4 (502)	18-1/2 (470)	18-1/2 (470)
20 X 25 (508 x 635)	19-3/4 (502)	24-3/4 (629)	18-1/2 (470)	23-1/2 (597)
20 X 30 (508 x 762)	19-3/4 (502)	29-3/4 (756)	18-1/2 (470)	28-1/2 (724)
12 X 24 (305 X 610)	11-3/4 (298)	23-3/4 (603)	10-1/2 (266)	22-1/2 (571)
14 X 25 (356 X 635)	13-3/4 (349)	24-3/4 (629)	12-1/2 (317)	23-1/2 (596)
16 X 20 (406 X 508)	15-3/4 (400)	19-3/4 (502)	14-1/2 (368)	18-1/2 (470)
16 X 25 (406 X 635)	15-3/4 (400)	24-3/4 (629)	14-1/2 (368)	23-1/2 (596)
24 X 24 (610 X 610)	23-3/4 (603)	23-3/4 (603)	22-1/2 (571)	22-1/2 (571)
12 X 12 (305 X 305)	11-3/4 (298)	11-3/4 (298)	10-1/2 (266)	10-1/2 (266)
14 X 14 (356 X 356)	13-3/4 (349)	13-3/4 (349)	12-1/2 (317)	12-1/2 (317)
14 X 20 (356 X 508)	13-3/4 (349)	19-3/4 (502)	10-1/2 (266)	18-1/2 (470)

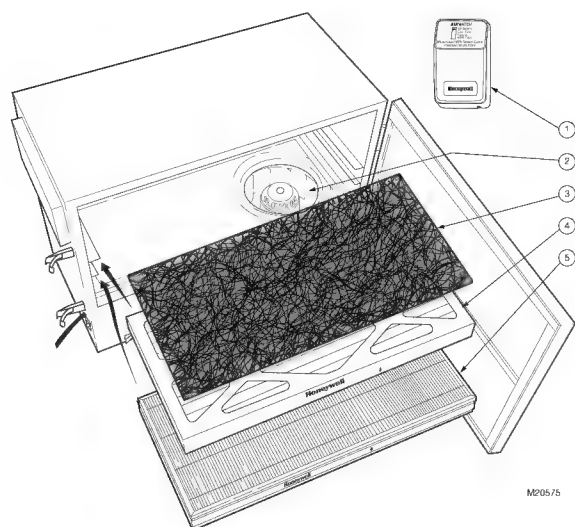
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Product Number	Dimensions, Approximate	Airflow Maximum Capacity	
		(cfm)	(m³/hr)
FC40R1003	20 in. x 20 in. (508 mm x 508 mm)	1150 cfm	1950 m³/hr
FC40R1011	20 in. x 25 in. (508 mm x 635 mm)	1450 cfm	2460 m³/hr
FC40R1029	20 in. x 30 in. (508 mm x 762 mm)	1800 cfm	3060 m³/hr
FC40R1037	12 in. x 24 in. (305 mm x 610 mm)	800 cfm	1360 m³/hr
FC40R1045	14 in. x 25 in. (356 mm x 635 mm)	1000 cfm	1700 m³/hr
FC40R1052	16 in. x 20 in. (406 mm x 508 mm)	900 cfm	1530 m³/hr
FC40R1060	16 in. x 25 in. (406 mm x 635 mm)	1150 cfm	1950 m³/hr
FC40R1078	24 in. x 24 in. (610 mm x 610 mm)	1700 cfm	2890 m³/hr
FC40R1094	12 in. x 12 in. (305 mm x 305 mm)	350 cfm	590 m³/hr
FC40R1102	14 in. x 14 in. (356 mm x 356 mm)	500 cfm	850 m³/hr
FC40R1110	14 in. x 20 in. (356 mm x 508 mm)	750 cfm	1270 m³/hr

* TRADELINE models • SUPER TRADELINE models

Replacement Media—Residential Air Cleaners

HEPA Replacement Media



Air Cleaner Type: HEPA Air Cleaner
Application: Replacement Filter

	Product Number	Used With	Description
3	32006026-001	F500	Carbon Filter for Whole House HEPA Air Cleaner
4	32006027-001	F500	2 inch Prefilter for Whole House HEPA Air Cleaner
5	32006028-001	F500	HEPA Filter for Whole House HEPA Air Cleaner
* TRADELINE models • SUPER TRADELINE models			

1 inch Microparticle Furnace Filter

OS Number	Description	
F1625A1003	1 inch Furnace Filter, 16 x 25	
F2020A1002	1 inch Furnace Filter, 20 x 20	
F2025A1007	1 inch Furnace Filter, 20 x 25	

Residential Air Cleaners Replacement Power Supply

Product Number	Used With	Description
208417G	F50	Power Box for F50F 120V Air Cleaner
208541	F52	Power Supply Enclosure, F52F 1-CELL
208542	F52	Power Supply Enclosure, F52F 2-CELL
203365A	—	Conversion Kit For Changing 120V Power Supply to 240V.
208045G	F50, F300	F50F, F300 SSPS With W8600F capability AND SSAFS. 120V 20 x 25, 16 x 25, 20 x 20, 20 x 12.5.
208045J	F50, F300	F50F, F300 SSPS With W8600F capability AND SSAFS. 120V 16 x 20.
208414A	F50	F50F SSPS with W8600E,F Capability and SSAFS, 120V, 20 x 25. Replaces 203101A. Replaced BY 208414H.
208414B	F50	F50F SSPS with W8600E,F Capability and SSAFS, 120V, 20 x 20, 16 x 25. Replaces 203101B. REPLACED BY 208414H.
208414C	F50	F50F SSPS with W8600E,F Capability AND SSAFS, 120V, 20 x 12.5. Replaces 203101C.
* TRADELINE models • SUPER TRADELINE models		

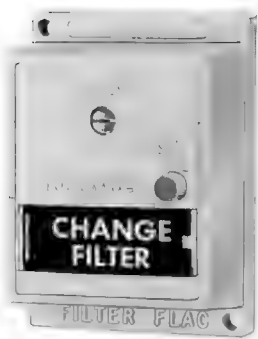
Replacement Power Supply—Residential Air Cleaners

Product Number	Used With	Description
208414G	F50	F50F SSPS With W8600E,F Capability AND SSAFS, 120V, 16 x 20. Replaces 203101H.
208414H	F50	F50F SSPS with W8600E,F capability AND SSAFS, 120V, 16 x 25, 20 x 20, 20 x 25.
208415C	F50	F50F SSPS with W8600E,F capability AND SSAFS, 240V, 20 x 12.5. Replaces 203454C.
208416AA	F52	F52F SSPS with W8600F capability AND SSAFS. 120V, 20 x 25.
208416AB	F52	F52F SSPS with W8600F capability AND SSAFS. 120V, 20 x 12.5.
208416L	F52	F52E SSPS, 120V, 20 x 12.5.
208416Q	F59	F59A SSPS, 120V, 0.4 OUTPUT.
208417A	F50	F50E POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS, 120V, 20 x 25. Replaces 203314A.
208417B	—	POWER PACK ASSEMBLY
208417M	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 20 x 25, 16 x 25.
208417Q	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 120V, 20 x 25, 16 x 25.
208417R	F300	F300E POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 20 x 25.
208417S	F300	F300E POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 16 x 25.
208418A	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 20 x 20.
208418E	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 16 x 20.
208418F	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 120V, 20 x 20. Replaces 203315A.
208418G	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 120V, 16 x 20. Replaces 203315F.
208418H	F300	F300E POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 20 x 20.
208418J	F300	F300E POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 16 x 20.
208419A	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 120V, 20 x 12.5.
208419B	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 240V, 20 x 12.5.
208419D	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 120V, 20 x 12.5.
208419E	F50	F50F POWER BOX ASSEMBLY, SSPS with W8600F capability AND SSAFS. 240V, 20 x 12.5.
208420A	F50	F50E POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS, 120V, 16 x 25, 20 x 20, 20 x 25. Replaces 202228A AND 202228B.
208420B	F50	F50E POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS, 240V, 16 x 25, 20 x 20, 20 x 25. Replaces 202228C AND 202228D.
208421C	F50	F50A,E POWER BOX ASSEMBLY, SSPS with W8600E capability. 120V. Replaces 200583A,B.
208421D	F50	F50A,E POWER BOX ASSEMBLY, SSPS with W8600E capability. 240V. Replaces 200583C,D.
208422A	F50	F50A,E POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 120V, 20 x 12.5. Replaces 203247A.
208422B	F50	F50A,E POWER BOX ASSEMBLY, SSPS with W8600E,F capability AND SSAFS. 240V, 20 x 12.5. Replaces 203247B.
208425H	—	EAC POWER PACK
208427C	—	POWER SUPPLY ASSEMBLY
208427D	—	POWER SUPPLY ASSEMBLY
208427K	—	POWER SUPPLY ASSEMBLY
32004930-001	F300	25 inch Power Pack Cover, white
208416R	F59	F59A SSPS, 240V, 50HzF59A SSPS, 120V, 0.4 OUTPUT.
32004930-002		COVER ASSEMBLY

* TRADELINE models • SUPER TRADELINE models

Air Quality Accessories—Residential Air Quality

S830 Filter Change Indicator



Indicates need to clean or replace air filters in forced-air heating, air conditioning and heat pump equipment.

- Red flag drops into window on fan compartment suction increase, which is caused by filter becoming clogged with dirt. Can also actuate an indicator light on system panel. Mounts on downstream side of furnace filter, directly on fan compartment or at a remote location using 1/4 in. tubing.

	Product Number	Description
	S830A1005	Filter Change Indicator
* TRADELINE models • SUPER TRADELINE models		

W8600A,B AirWatch Indicator



Reminds you when to change your air filter, ultraviolet lamp and humidifier pad.

- Mounts in any convenient location.
- Easily mounted with two screws through holes in base.
- No wiring needed.
- Free with Honeywell Media Air Cleaner. Sold separately for other products.
- Indicator flashes when...
 - Batteries need changing. CR-123 Lithium Battery available separately
 - Media filter needs replacing or electronic filter needs washing.
 - UV Air Treatment system lamp needs replacing.
 - Humidifier pad needs replacing. Set DIP switches according to equipment installed in the home:
 - Set air filter change reminder to ON or OFF.
 - Set UV lamp change reminder to ON or OFF.
 - Set Humidifier pad change reminder to ON or OFF.
 - Set air filter change time to 3 months, 6 months, 9 months or 12 months.

	Product Number	Used With	Description
*	W8600A1007	F50, F300, F150, F100	AIRWATCH Indicator
	W8600B1005	F200	RF AIRWATCH Indicator
* TRADELINE models • SUPER TRADELINE models			

Air Quality Accessories—Residential Air Quality

W8600F Air Cleaner Monitor



Provides remote performance indication for F50F, F52F and F300E Electronic Air Cleaners.

- Indicates status of Electronic Cleaner:
 - ON LED indicates EAC is powered and system fan is running.
 - BATTERY LED indicates that battery is low and needs replacing.
 - SERVICE LED indicates prefilter or cells need washing or postfilter needs replacement.
 - FAULT LED indicates EAC fault. Call a service technician.
- Easily mounted with two screws through holes in base.

	Product Number	Used With	Description
*	W8600F1006	F50F, F300	EAC Performance Indicator, taupe
*	W8600F1014	F50F, F300	EAC Performance Indicator, white
* TRADELINE models • SUPER TRADELINE models			

W8650 AirWatch Indicator

Includes Air Cleaner Door with RF Transmitter and W8600B RF AIRWATCH Indicator. Reminds you when to change your Honeywell Media Air filter, ultraviolet lamp and humidifier pad.

- Use to upgrade Honeywell F25, F35, F100 or F150 Media Air Cleaners.
- Integral pressure sensors in door signal when filter change is required based on increased pressure drop threshold at filter. Light in door flashes when sensors detect Media Air filter needs changing. Filter change status is also transmitted to wall-mounted W8600B RF AIRWATCH Indicator.
- W8600B easily mounted with two screws through holes in base.
- No wiring needed.
- W8600B Indicator flashes when...
 - Batteries in W8600B Indicator or air cleaner door need changing.
 - Media filter needs replacing.
 - UV Air Treatment system lamp needs replacing.
 - Humidifier pad needs replacing.
- Activate change indicators according to equipment installed in the home:
 - Set UV lamp change reminder to ON or OFF.
 - Set Humidifier pad change reminder to ON or OFF.

	Product Number	Used With	Description
	W8650E1007	F25, F35, F100 or F150	RF AIRWATCH Upgrade for Media Air Cleaner, 16 inch door
	W8650E1015	F25, F35, F100 or F150	RF AIRWATCH Upgrade for Media Air Cleaner, 20 inch door
* TRADELINE models • SUPER TRADELINE models			

Residential Air Cleaner Parts and Accessories

OS Number	Description	Used With
121584	SWITCH INTERLOCK	—
136375	Pan Head Screw (first used with F50A), #8-32 UNC	F50
136399	CONTACT TRAY, F50A,E	F50A,E
136518	CELL KEY	F50, F300
137266	CELL HANDLE	F50, F300
138627	REPLACEMENT DOOR, F52A, EGG CRATE	F52A
138628	REPLACEMENT DOOR, F52B, EGG CRATE	F52B
138699	REPLACEMENT PREFILTER, F52A	F52A
138700	REPLACEMENT PREFILTER, F52B	F52B
190070	SWITCH	—
190333	F54C DOOR INTERLOCK SWITCH	F54C
190335	SWITCH	—
190356	F59A PREFILTER-FOAM	F59A

Residential Air Cleaner Parts and Accessories

OS Number	Description	Used With
190357	F59A CARBON FILTER, SERIES 1 AND 2	F59A
190358	F59A CELL HANDLE	F59A
190362	CATCH-FEMALE	—
190382	F59A CONTROL SWITCH	F59A
190909	PREFILTER SCREEN, F52C1003 (PRE 1983)	F52C1003
190910	PREFILTER SCREEN, F52D1001 (PRE 1983)	F52D1001
190913	HOOK	—
190915	DOOR LATCH, F52C,D,E	F52C,D,E
190934	COVER	—
190964	BRACKET	—
195911	FILTER-CHARCOAL	—
198441	PROTECTIVE SCREEN, F52C1078, F52E 1-CELL, EGG CRATE	F52C,E
198442	PROTECTIVE SCREEN, F52D1100, F52E 2-CELL, EGG CRATE	F52D,E
198579	FAN MOTOR, F59A (PRE 1993)	F59A
198580	FAN	—
198672	FILTER	—
200732	F52E SWITCH/INDICATOR LIGHT	F52E
201049	LAMP NEON, F59A	F59A
201422	Terminal bushing for F52C and F52E 1 cell.	F52C,E
202280	FAN BLADE	—
202281	MOTOR CAPACITOR	—
202307	GRILL-INLET	—
202308	GRILLE-INLET	—
202311	PLATE-MOTOR MOUNT	—
202313	BLACK OUTLET GRILL	—
202314	WHITE GRILL OUTLET	—
202361	PLUG - MDSE	—
202614	CARBON FILTER	—
202619	COVER LATCH BLACK	—
202668	20 inch IONIZER GRID	—
202791	MOTOR MOUNT	—
203321	ON/OFF SWITCH, F50F, F52F	F52F, F50F, F300
203366	ROUND INSULATOR FOR FC37A,B CELLS	FC37
203371	PREFILTER FOR 16 x 25 F50, F300	F50, F300
203372	PREFILTER FOR 20 x 25, 20 x 12.5 F50, F300	F50, F300
203373	PREFILTER FOR 20 x 20 F50, F300	F50, F300
203389	SQUARE INSULATOR FOR FC37A,B CELLS	FC37
203634	MOTOR, 120V, F59A	F59
203635	MOTOR	—
203638	CARBON FILTER, F59A, SERIES 1,2,3	F59
207610	GRILLE	—
207611	GRILLE	—
207612	GRILLE	—
207631	DOOR LATCH, F52F	F52F
208536	PREFILTER FOR F52F 1-CELL	F52F
208537	PREFILTER FOR F52F 2-CELL	F52F
208543	INTERLOCK SWITCH, F52F	F52F
209695	EAC BOOT HOLE COVER	—
209989	PREFILTER FOR 16 x 20 F50, F300	F50, F300

Residential Air Cleaner Parts and Accessories

OS Number	Description	Used With
220393	IMPELLER	—
3200068-002	25 inch Frame for use with FC100C Collapsible Filter	FC100C
32001438-001	Grille	—
32001438-002	Grille	—
32001438-003	F27F Egg Crate Grille. F27F1057, F27F1024.	F27F
32001438-004	F52F Egg Crate Grille. F52F1048, F52F1006.	F52F
32001438-005	F52F Egg Crate Grille. F52F1055, F52F1014.	F52F
32002109-001	Foam gasket for eac cabinet connections to furnace and duct work. ordered in multiples of 10.	F50, F300
32004876-001	20 inch F200E Door, RF transmitter	F200
32004876-002	16 inch F200E Door, RF transmitter	F200
32004876-003	20 inch F300E Door	F300
32004876-004	16 inch F300E Door	F300
32004876-005	20 inch F150E Door	F150
32004876-006	16 inch F150E Door	F150
32005012-001	HEPA Air Watch Indicator	F500
32006670-001	Blower assembly for F500	F500
114748/0021	Plate mounting for S830A Filter Change Indicator	S830
136392AQ	20 in. x 25 in. Door assembly for F50E units with date code after 9525. Includes Test Button assembly and spring assembly	F50
136393AD	Access door assembly for 16 inch x 25 inch F50E	F50E
136396B	Power box cover for 16 in. x 25 in., 20 in. x 25 in., and 20 in. x 20 in. F50E	F50
136414A	TERMINAL BD ASSEMBLY, F50E	F50
136415A	J-box contact board assembly for F50A or F50E	F50A,E
136434AA	20 in. replacement Ionizer wire for F50A, F50E, F50F	F50, F52, F300
136434BA	16 in. replacement Ionizer wire for F50A, F50E, F50F	F50, F52, F300
137980A	Test button assembly for F50A, F50E, or F50F	F50, F300
138621A	CONTACT BDASM, F50A	F50A
138889A	CONTACT BOARD, F50E, F59A	F50E, F59
190364A	F59A CASTER HARDWARE, PKG OF 4	F59
190912A	CONTACT BOARD, F52C,D,E,F	F52C,D,E,F
197983E	F66 Replacement Expandapac Media	F66
200546B	Four wire Terminal strip assembly	—
200546C	W8600E Terminal Switch for F50F	F50F, W8600, F50F
202278A	Motor Plate Assembly	—
202927A	Cover And Latch Assembly	—
202927B	Cover and Latch Assembly	—
203305AB	F50F Door Assembly, including Test Button, 20 in.	F50F
203305AH	20 inch F100 Door	F100
203306AB	F50F Door Assembly, Incl Test Button, 16 in.	F50F
203306AH	Door assembly for 16 in. F100	F100
203318A	F50F Cover Assembly, 25 in.	F50F
203319A	F50F Cover Assembly, 20 in.	F50F
203329A	F50F Terminal Board Assembly, Rear	F50F
203329B	F50F Terminal Board Assembly, Front, 25 in. Box	F50F
203329C	F50F Terminal Board Assembly, Front, 20 in. Box	F50F
203329D	F50F Terminal Board Assembly, Front, 12.5 in. Box	F50F
207959A	Replacement motor blade assembly	F29
208410C	Printed Wiring Board Assembly	—

Residential Air Cleaner Parts and Accessories

OS Number	Description	Used With
208425A	F50A,E SSPS. 120V, 16 x 25, 20 x 25, 20 x 20. Replaces 220429AXA AND 220429BXA.	F50A,E
208425B	F50A,E SSPS. 240V, 16 x 25, 20 x 25, 20 x 20. Replaces 220429GXA, 220429FXA AND 220429WXA.	F50A,E
208425C	F59A, F56A SSPS. 120V. Replaces 220429EXC.	F59, F56
208425E	F50A,E SSPS. 240V, 20 x 12.5. Replaces 220429HXB	F50A,E
208425F	F52C,D, F54C SSPS. 220/240V. Replaces 220429YXB AND 220429VXB.	F52C,D F54C
208425G	F50A,E, F52C,D, F58A,E SSPS. 120V, 20 x 12.5. Replaces 220429QXB, 220429AXB, 220429BXB.	F50A,E F52C,D, F58A,E
208427A	F52E SSPS. 120V, 20 x 25. Replaces 203327A.	F52E
208427AA	F52F SSPS with W8600E,F capability AND SSAFS. 120V, 20 x 25. Replaces 203327H.	F52F
208427AB	F50E SSPS with W8600E,F capability. 120V, 20 x 25, 16 x 25.	F50E
208427B	F50E SSPS. 120V, 20 x 25. Replaces 203327A.	F50E
208427F	F50E SSPS. 120V, 16 x 25, 20 x 20. Replaces 203327F.	F50E
208427G	F52E SSPS. 1 CELL. Replaces 203327B.	F52E
208427H	F52E SSPS. 120V, 20 x 12.5. Replaces 203350A.	F52E
208427J	F52F SSPS with W8600E capability. 120V, 20 x 12.5. Replaces 203327R.	F52F
208427M	F50E SSPS. 240V, 20 x 25. Replaces 203327E.	F50E
208427P	F50E SSPS. 240V, 16 x 25, 20 x 20. Replaces 203327G.	F50E
21581/0767	Hex Nut for Door Hinge for F52C, F52D or F52E	F52C,D,E
220334B	F52D,E 2-CELL DOOR ASSEMBLY. INCL GRILL AND PREFILTER.	F52D,E
220364A	GRILL ASSEMBLY	—
4074EBC	Bag assembly consists of Interlock Switch, switch mounting bracket, 3 screws, 3 washers, 3 hex-nuts, 4 quick-connect terminals, 2 in vinyl tubing, wire clamp, switch actuator and instruction sheet	F56A, F59A
4074EHG	FC37A TERMINAL BOARD REPAIR KIT. CONTAINS 2 CONNECTOR CLIPS, 1 TERMINAL BOARD AND INSTRUCTION SHEET.	FC37A
4074EMN	HIGH VOLTAGE WIRE FOR EAC, RED, 50FT.	—
4074EMP	HIGH VOLTAGE WIRE FOR EAC, BLACK, 50FT.	—
4074ETD	F50F LINE CORD AND STRAIN RELIEF.	F50F
4074ETE	F50F, F52F NEON LIGHT ASSEMBLY. INCL LENS AND WIRE TIE. 16 x 25, 20 x 20, 20 x 25	F50F, F52F
4074ETF	Bag assembly containing Neon Lamp, Lens and Tie Wrap for 20 in. x 12.5 in. F50F	—
4074ETG	F50F INTERLOCK BRACKET AND SWITCH	F50F
4074ETH	Air Flow Switch Bag Assembly, with pin connections	F50F
4074ETJ	Air Flow Switch Bag Assembly for 20x12 1/2, with pin connections	F50F
4074EYS	F50F NEON LIGHT ASSEMBLY	F50F
4074EZB	Air Flow Switch Bag Assembly, with molex plug connection	F50, F300
4074EZK	Grille Latch Hardware for F52F	F52F
FC37A1049	10 x 20 inch Air Cleaner Cell	F50F, F300
FC37A1064	12.5 x 20 inch Air Cleaner Cell	F50F, F300
FC37A1114	10 x 16 inch Air Cleaner Cell	F50F, F300
FC37A1130	12.5 x 16 inch Air Cleaner Cell	F50F, F300
FC37A1171	12.5 x 20 inch Air Cleaner Cell	F52F
FC37B1030	12.5 x 20 inch Air Cleaner Cell	—

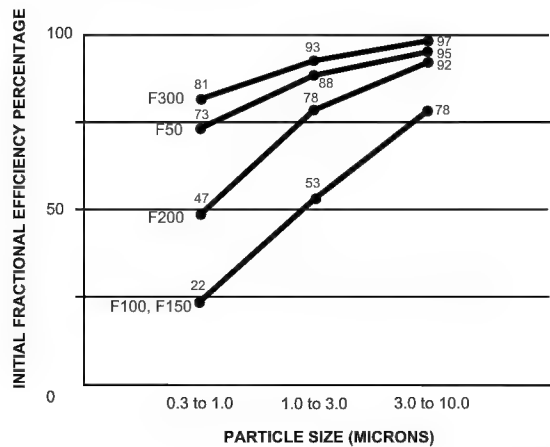
Future Option...

The Time Might Be Right To Upgrade

Installed F25F, F35F, F100, F150, F200 Media Air Cleaner cabinets are designed to be easily upgraded to an F50 or F300 Electronic Air Cleaner. An electronic air cleaner has the features to increase the comfort and enjoyment of your customer's home.

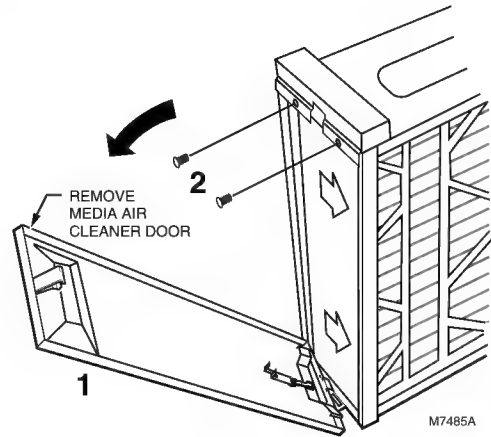
- Up to 98 percent efficient at capturing airborne particles from the air that passes through it.
- Can save 10 to 15 percent in operating costs over the life of the equipment.
- Honeywell offers an exclusive 10-year Clean Coil Guarantee.
- Protects investment in expensive HVAC equipment.
- Increased home comfort.
- Easy to maintain.

Initial Fractional Efficiency



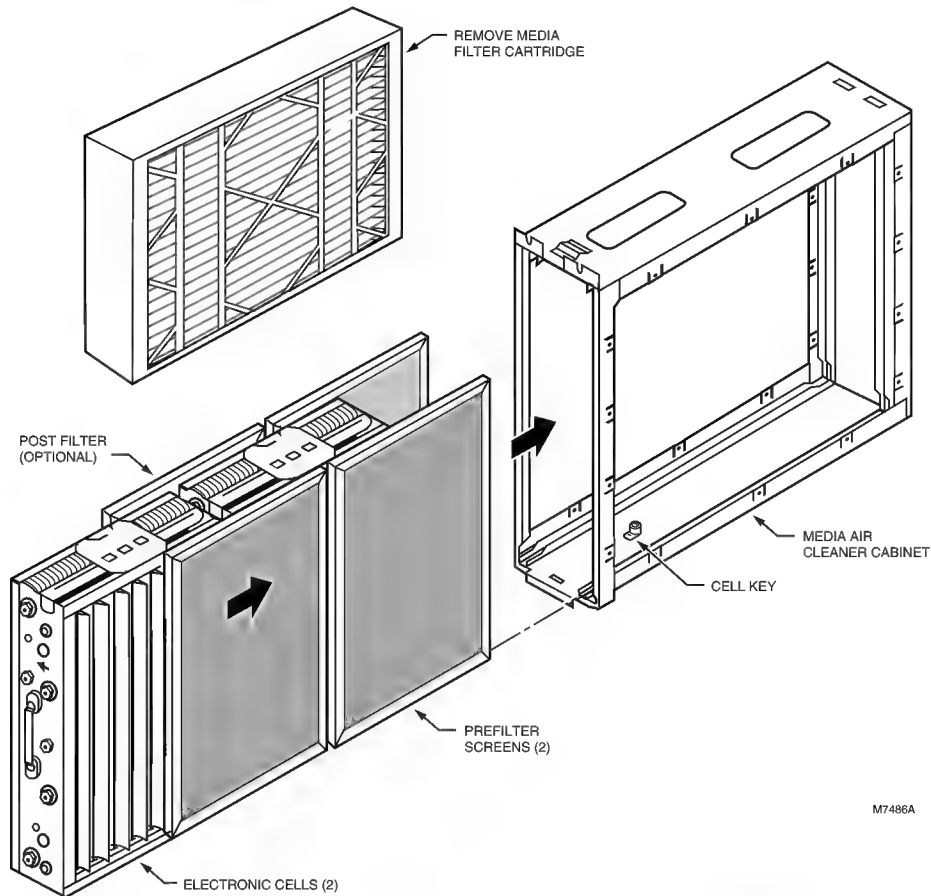
Upgrade in a few easy steps...

1. Start with a complete F50F or F300E. Remove the Media Air Cleaner door. (See Electronic Air Cleaner section for order number.)

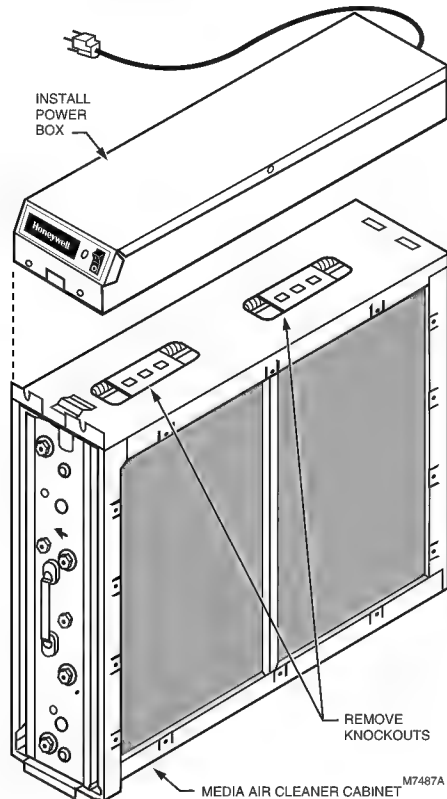


Residential Air Cleaners

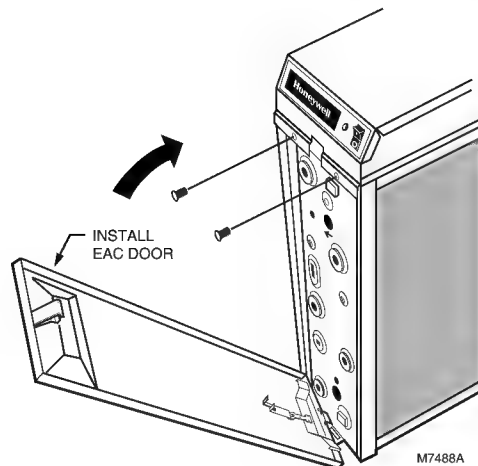
2. Remove and discard filter cartridge; insert cell key, two cells, prefilters and optional post filter from the F50F or F300E.



3. Remove knockouts from top of cabinet. Install and plug in EAC power box. See page 290 for order numbers.



4. Install EAC door. Cover knockout holes in empty EAC cabinet with duct tape. Insert new filter cartridge and install Media Air Cleaner door. Now you have another Media Air Cleaner for sale!



Humidifiers—Bypass Flow-Through

HE160 By-pass Disk Humidifier



Type: By-pass Reservoir

Bypass Disk Humidifier uses the warm air furnace blower to provide whole house humidification.

- Lower maintenance than most popular drum models.
- Small footprint and light weight allows for easy installation.
- Reversible components allow for quick installation on either air duct.
- Minimal amount of water and electricity needed for operation.
- Can be installed in a furnace room without a drain.
- Interior components designed for easy clean up or replacement.
- Includes easy-to-use humidistat which mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed to replace both the thermostat and humidistat for improved aesthetics and convenience.

Electrical Ratings: 24 Vac

Product Number	Capacity		Bypass Duct Opening (diameter)		Includes
	(gal. per day)	(liter per day)	(inch)	(mm)	
* HE160A1003	14 gpd	53 lpd	6 in.	152 mm	By-pass Disk Humidifier with H8908B Humidistat

* TRADELINE models • SUPER TRADELINE models

HE220; HE260 By-pass Flow-through Humidifier



Type: By-pass Flow-Through

Dimensions, Approximate (height x width x depth): 13 9/16 x 12 x 9 1/8 (345 x 305 x 232)

Electrical Ratings: 24 Vac, 0.5A

Bypass Flow-through Humidifiers use the warm air furnace blower to provide whole house humidification.

- Preassembled for quicker installation.
- Small footprint, light weight and reversible components allow for easy mounting on either warm air supply or cold air return of any forced air furnace.
- Interior components designed for quick maintenance and service.
- Includes easy-to-use humidistat which mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed to replace both the thermostat and humidistat for improved aesthetics and convenience.
- Standard tested per ARI Standard 610.

Frequency: 60 Hz

Approvals:

Underwriters Laboratories, Inc: UL 56 BL., CUL 56 BL.

Product Number	Capacity		Bypass Duct Opening (diameter)		Bypass Duct Opening (diameter)		Includes
	(gal. per day)	(liter per day)	(inch)	(mm)	(inch)	(mm)	
* HE220A1001	12 gpd	46 lpd	6 in.	152 mm	9 7/16 x 9 5/18	241 x 238	By-pass Flow-through Humidifier, humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, and H8908B Humidistat
* HE220B1009	12 gpd	46 lpd	6 in.	152 mm	9 7/16 x 9 5/18	241 x 238	By-pass Flow-through Humidifier, humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, and H1008 HumiCalc-- Automatic Humidistat
* HE260A1002	17 gpd	64 lpd	6 in.	152 mm	12 5/8 x 9 3/4	321 x 248	By-pass Flow-through Humidifier, humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, and H8908B Humidistat
* HE260B1000	17 gpd	64 lpd	6 in.	152 mm	12 5/8 x 9 3/4	321 x 248	By-pass Flow-through Humidifier, humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, and H1008 HumiCalc-- Automatic Humidistat

* TRADELINE models • SUPER TRADELINE models

Humidifiers—Bypass Flow-Through

HE225; HE265 Enviraire Elite By-pass Flow-through Humidifier



Bypass Flow-through Humidifiers use the warm air furnace blower to provide whole house humidification.

- Enviraire Elite humidifier pad is coated with Aglon antimicrobial agent.
- Preamsembled for quicker installation.
- Small footprint, light weight and reversible components allow for easy mounting on either warm air supply or cold air return of any forced air furnace.
- Interior components designed for quick maintenance and service.
- Includes easy-to-use humidistat which mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed to replace both the thermostat and humidistat for improved aesthetics and convenience.
- Standard tested per ARI Standard 610.

Type: By-pass Flow-Through

Dimensions, Approximate (height x width x depth): 13 9/16 x 12 x 9 1/8 (345 x 305 x 232)

Electrical Ratings: 24 Vac, 0.5A

Frequency: 60 Hz

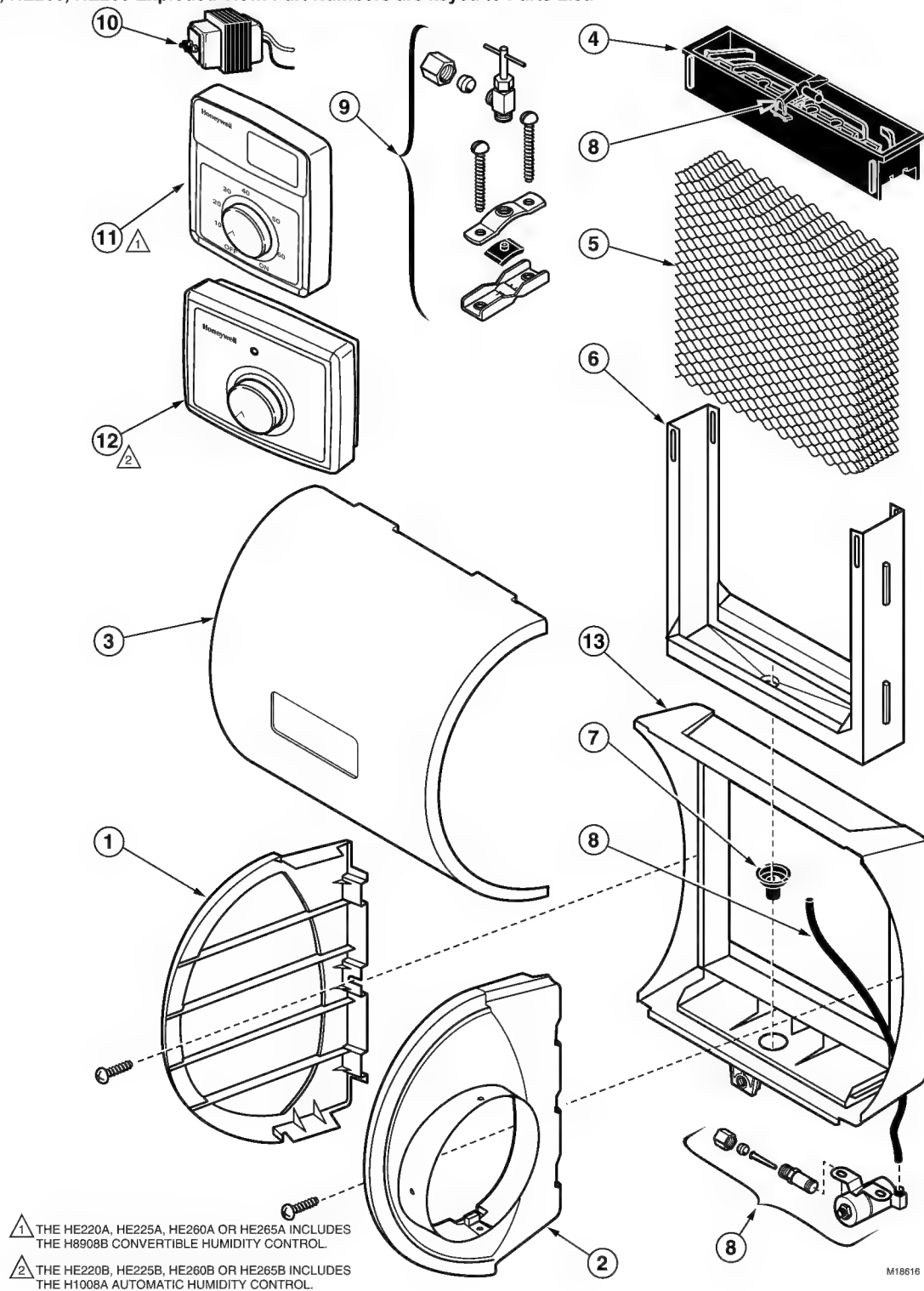
Approvals:

Underwriters Laboratories, Inc: UL 56 BL., CUL 56 BL.

Product Number	Capacity		Bypass Duct Opening (diameter)		Bypass Duct Opening (diameter)		Includes
	(gal. per day)	(liter per day)	(inch)	(mm)	(inch)	(mm)	
* HE225A1006	12 gpd	46 lpd	6 in.	152 mm	9 7/16 x 9 5/18	241 x 238	By-pass Flow-through Humidifier, summer shut-off damper humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, with H8908B Humidistat
* HE225B1004	12 gpd	46 lpd	6 in.	152 mm	9 7/16 x 9 5/18	241 x 238	By-pass Flow-through Humidifier, summer shut-off damper humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, with H1008 HumidiCalc™ Automatic Humidistat
* HE265A1007	17 gpd	64 lpd	6 in.	152 mm	12 5/8 x 9 3/4	321 x 248	By-pass Flow-through Humidifier, summer shut-off damper humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, with H8908B Humidistat
* HE265B1005	17 gpd	64 lpd	6 in.	152 mm	12 5/8 x 9 3/4	321 x 248	By-pass Flow-through Humidifier, summer shut-off damper humidifier pad, mounting template, self-piercing saddle valve 24 Vac transformer and wire, H1008 HumidiCalc™ Automatic Humidistat
* TRADELINE models • SUPER TRADELINE models							

Humidifiers—Bypass Flow-Through

HE220, HE225, HE260, HE265 Exploded View. Part Numbers are keyed to Parts List.



Humidifiers—Bypass Flow-Through

HE220, HE225, HE260 and HE265 Parts List

No.	Description	HE220 Part Number	HE225 Part Number	HE260 Part Number	HE265 Part Number
1	Side wall	32001612-001	32001612-002	32001626-001	32001626-002
2	Bypass side wall	32001613-001	32001613-002	32001627-001	32001627-002
3	Cover Assembly	32001611-001	32001611-003	32001611-002	32001611-004
4	PerfectFlo™ water distribution tray	32001619-001	32001619-001	32001630-001	32001630-001
5	Humidifier Pad (HCXXEXXXX pad has antimicrobial coating)	HC22A1007	HC22E1003	HC26A1008	HC26E1004
6	Humidifier Pad Frame	32001621-001	32001621-001	32001632-001	32001632-001
7	Drain fitting	32001615-001	32001615-001	32001615-001	32001615-001
8	Solenoid valve assembly (includes nozzle)	32001639-002	32001639-002	32001639-002	32001639-002
9	Saddle valve assembly	32001616-001	32001616-001	32001616-001	32001616-001
10	Transformer (10 VA)	32001652-001	32001652-001	32001652-001	32001652-001
11	Convertible Humidity Control	H8908B1002	H8908B1002	H8908B1002	H8908B1002
12	Automatic Humidity Control with HumidiCalc™+ Software	H1008A1008	H1008A1008	H1008A1008	H1008A1008
13	Base insert assembly, includes no. 8 above	32001625-001	32001625-003	32001625-002	32001625-004
—	Hardware Kit for Solenoid Assembly (same as Solenoid valve assembly without the solenoid valve)	32001752-001	32001752-001	32001752-001	32001752-001
—	Current Sensing Relay	32001754-001	32001754-001	32001754-001	32001754-001

Humidifiers—Powered Flow-Through

HE360 Powered Flow-through Humidifier



Type: Powered Flow-Through

Dimensions, Approximate (height x width x depth): 15 x 14 x 10 1/4 (387 x 356 x 260)

Electrical Ratings: 120 Vac, 0.7A

Power Flow-through Humidifier uses the warm air furnace blower to provide whole house humidification.

- Capable of humidifying the largest area, up to 4,200 sq ft (386 sq m), of any Honeywell flow-through humidifier.
- Interior components designed for quick maintenance and service.
- Includes easy-to-use humidistat which mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed instead of the humidistat for improved aesthetics and convenience.
- Standard tested per ARI Standard 610.

Frequency: 60 Hz

Approvals:

Underwriters Laboratories, Inc: UL 56 BL., CUL 56 BL.

Product Number	Capacity		Bypass Duct Opening (diameter)		Includes
	(gal. per day)	(liter per day)	(inch)	(mm)	
* HE360A1019	18 gpd	68 lpd	14 1/16 x 13 1/2	357 x 343	HE360 Powered Flow-through Humidifier, mounting template, humidifier pad, self-piercing saddle valve, H8908B Humidistat.
* HE360B1009	18 gpd	68 lpd	14 1/16 x 13 1/2	357 x 343	HE360 Powered Flow-through Humidifier, mounting template, humidifier pad, self-piercing saddle valve, H1008 HumidiCalc Automatic Humidistat.

* TRADELINE models • SUPER TRADELINE models

HE365 Enviracaire Elite Powered Flow-through Humidifier



Type: Powered Flow-Through

Dimensions, Approximate (height x width x depth): 15 x 14 x 10 1/4 (387 x 356 x 260)

Electrical Ratings: 120 Vac, 0.7A

Power Flow-through Humidifier uses the warm air furnace blower to provide whole house humidification.

- Enviracaire Elite humidifier pad is coated with Aglon antimicrobial agent.
- Capable of humidifying the largest area, up to 4,200 sq ft (386 sq m), of any Honeywell flow-through humidifier.
- Interior components designed for quick maintenance and service.
- Includes easy-to-use humidistat which mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed instead of the humidistat for improved aesthetics and convenience.
- Standard tested per ARI Standard 610.

Frequency: 60 Hz

Approvals:

Underwriters Laboratories, Inc: UL 56 BL., CUL 56 BL.

Product Number	Capacity		Bypass Duct Opening (diameter)		Includes
	(gal. per day)	(liter per day)	(inch)	(mm)	
* HE365A1006	18 gpd	68 lpd	14 1/16 x 13 1/2	357 x 343	HE360 Powered Flow-through Humidifier, mounting template, humidifier pad, self-piercing saddle valve, H8908B Humidistat.
* HE365B1004	18 gpd	68 lpd	14 1/16 x 13 1/2	357 x 343	HE360 Powered Flow-through Humidifier, mounting template, humidifier pad, self-piercing saddle valve, H1008 HumidiCalc Automatic Humidistat.

* TRADELINE models • SUPER TRADELINE models

HE360, HE365 Exploded View. Part Numbers are keyed to Parts List.



HE360 and HE365 Parts List

No.	Description	HE360 Part Number	HE365 Part Number
2	Water Distribution Tray	32001630-001	32001630-001
3	Solenoid Valve Assembly (Includes nozzle)	32001876-001	32001876-001
4	Humidifier Pad (HC26E pad has antimicrobial coating)	HC26A1008	HC26E1004
5	PWB Assembly (Includes transformer)	32001676-001	32001676-001
6	Humidifier Pad Frame	32001632-001	32001632-001
7	Base/Insert Assembly	32001660-001	32001660-002
8	Fan Blade	32000429-001	32000429-001
9	Motor Mount	32001670-001	32001670-001
10	Fan Shroud	32001664-001	32001664-001
11	Fan Motor	32005376-001	32005376-001
12	Bag Assembly, Saddle Valve	32001616-001	32001616-001
13	Convertible Humidity Control	H8908B1002	H8908B1002
14	Automatic Humidity Control	H1008A1008	H1008A1008
15	Cover/Screw Assembly	32001663-001	32001663-002
16	Power Cord	32000423-001	32000423-001
17	Drain Fitting	32001615-001	32001615-001
—	Hardware Kit for Solenoid Assembly (same as Solenoid Valve Assembly without the solenoid valve)	32001752-001	32001752-001
—	Current Sensing Relay	32001754-001	32001754-001

HE440 Steam Powered Humidifier



Type: Steam Reservoir

Dimensions, Approximate (height x width x depth): 6 3/4 x 12 5/8 x 13 1/4 (171 x 302 x 336)

Electrical Ratings: 120 Vac, 1.5 kW, 12.5 A

Frequency: 60 Hz

Approvals:

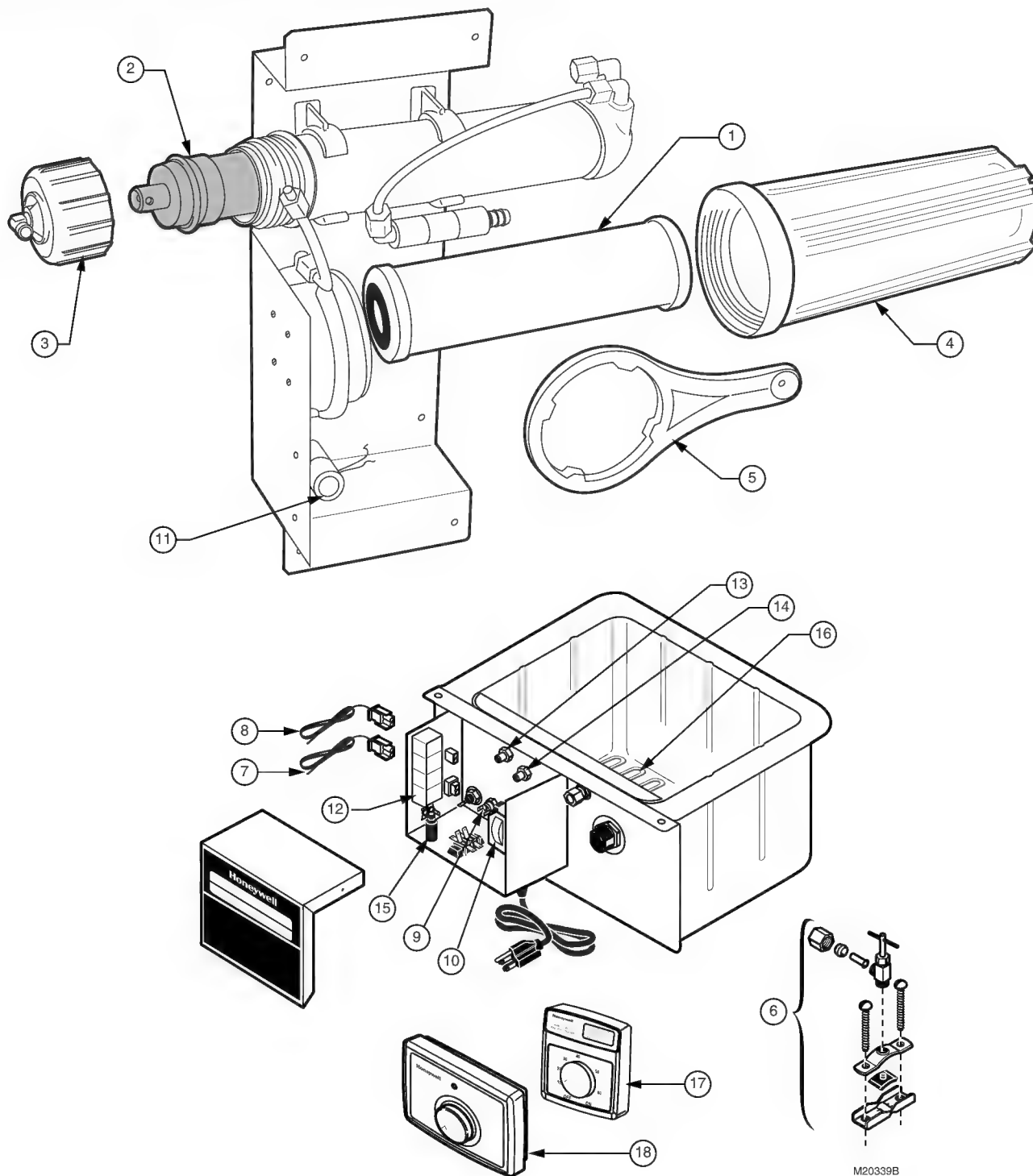
Underwriters Laboratories, Inc: UL Listing 42U8, CUL Listing 42U8.

	Product Number	Capacity		Bypass Duct Opening (diameter)		Includes
		(gal. per day)	(liter per day)	(inch)	(mm)	
*	HE440A1005	13 gpd	49 lpd	8 1/2 x 11 1/2	216 x 290	Steam Power Humidifier, two stage water treatment system with chlorine filter and RO filter, wiring cables, mounting brackets, and H8908B Humidistat.

* TRADELINE models • SUPER TRADELINE models

Humidifiers—Steam Powered

HE440A and HE480A Exploded View. Part Numbers are keyed to Parts List.



M20339B

HE440A and HE480A Parts List

No.	Description	Part No.
1 and 2	Filter Pack (1 RO and 2 chlorine filters)	32006450-001
1	Chlorine Filter	32006451-001
3	RO Cap	32006437-001
4	Chlorine Filter Housing	32006438-001
5	Hand Tool	32006439-001

Humidifiers—Replacement Parts, Pads and Filters

No.	Description	Part No.
6	Saddle Valve Assembly	32001616-001
7	Solenoid Wiring Cable (20 ft)	32006440-001
8	System Fan Wiring Cable (5 ft)	32006441-001
9	Thermal Fan Switch	32006442-001
10	Transformer (120/24, HE440)	32006443-001
10	Transformer (240/24, HE480)	32006443-002
11	Solenoid Valve	32006444-001
12	Relay	32006445-001
13	Float, long stem assembly	32006446-001
14	Float, short stem assembly	32006447-001
15	On Light (120V, HE440)	32006448-001
15	On Light (240V, HE480)	32006448-002
16	Heating Element (1500W, 120V, HE440)	32006449-001
16	Heating Element(2000W, 240V, HE480)	32006449-002
17	Humidistat	H8908B1002
18	Automatic Humidistat with HumidiCalc™	H1008A1008

Humidifier Replacement Pads and Filters

Product Number	Used With	Description	Includes
32000146-001	HE120	HE120 Replacement Humidifier Pad (includes clips)	—
32001679-001	HE420HE460	HE420, HE460 Replacement Chlorine Filter	—
32006450-001	HE440	HE440 Filter Pack	1 RO filter and 2 Chlorine filters.
32006451-001	HE440	HE440 Chlorine Filter	1 Chlorine filter
HC18A1016	—	Replacement pad for Aprilaire 112, 136, 224, 440, 445 Humidifiers	—
* HC22A1007	HE220	HE220 Humidifier Pad	—
* HC22E1003	HE225	HE225 Humidifier Pad with AgION(TM) Coating	—
* HC26A1008	HE360HE260	HE260 Humidifier Pad	—
* HC26E1004	HE265HE365	HE265 Humidifier Pad with AgION(TM) Coating	—
* HC36A1007	HE360	HE360A1001 Humidifier Pad	—

* TRADELINE models • SUPER TRADELINE models

Humidifier Parts

OS Number	Description	Used With
32000132-001	HE120 24 Vac Motor	HE120
32000134-001	HE120 Water Pan	HE120
32000135-001	HE120 Float for Valve	HE120
32000136-001	HE120 Float Valve	HE120
32000137-001	HE120 Valve Seat	HE120
32000141-001	HE120 Drum Assembly	HE120
32000148-001	HE460 Heating Element	HE460
32000149-001	HE420, HE460 Safety Float Switch	HE460, HE420
32000156-001	HE420, HE460 Fan Wiring Assembly	HE460, HE420
32000158-001	HE420, HE460 Indicator Light	HE460, HE420
32000159-001	HE420, HE460 Thermal Fan Switch	HE460, HE420
32000164-001	HE420 Heating Element	HE420
32000166-001	HE420, HE460 Float for Water Fill Valve	HE460, HE420
32000167-001	HE420, HE460 Water Fill Valve	HE460, HE420

Humidifiers—Replacement Parts, Pads and Filters

OS Number	Description	Used With
32000403-001	HE360A1001 Hardware Kit	HE360
32000406-001	HE360A1001 Solenoid	HE360
32000407-001	BASE ASSEMBLY FOR HE360A1001	HE360A
32000408-001	HE360, HE365 Feed Tube Nozzle	HE360, HE365
32000413-001	HE360A1001 Printed Wiring Board Assembly	HE360
32000417-001	SHROUD, FAN FOR HE360A1001	HE360A
32000423-001	HE360, HE365 Power Cord	HE360, HE365
32000429-001	HE360, HE365 Fan Blade	HE360, HE365
32000437-001	COVER ASSEMBLY FOR HE360A1001	HE360
32001611-001	HE220 Cover Assembly	HE220
32001611-002	HE260 Cover Assembly	HE260
32001611-003	HE225 Cover Assembly	HE225
32001611-004	HE265 Cover Assembly	HE265
32001612-001	HE220 Sidewall	HE220
32001612-002	HE225 Sidewall	HE225
32001613-001	HE220 By-pass Sidewall	HE220
32001613-002	HE225 By-pass Sidewall	HE225
32001615-001	HE220, HE225, HE260, HE265, HE360, HE365 Drain Fitting	HE260, HE360, HE365, HE220, HE225, HE265
32001616-001	HE120, HE220, HE225, HE260, HE265, HE360, HE365 Saddle Valve Assembly	HE260, HE120, HE360, HE365, HE220, HE225, HE265
32001619-001	HE220, HE225, HE360A1001 PerfectFlo(TM) Water Distribution Tray	HE360, HE220, HE225
32001621-001	HE220, HE225 Humidifier Pad Frame	HE220, HE225
32001625-001	HE220 Base Assembly (includes solenoid valve assembly)	HE220
32001625-002	HE260 Base Assembly (includes solenoid valve assembly)	HE260
32001625-003	HE225 Base Assembly (includes solenoid valve assembly)	HE225
32001625-004	HE265 Base Assembly (includes solenoid valve assembly)	HE265
32001626-001	HE260 Sidewall	HE260
32001626-002	HE265 Sidewall	HE265
32001627-001	HE260 By-pass Sidewall	HE260
32001627-002	HE265 By-pass Sidewall	HE265
32001630-001	HE260, HE265, HE360, HE365 PerfectFlo(TM) Water Distribution Tray	HE360, HE365, HE265, HE26
32001632-001	HE260, HE265, HE360, HE365 Humidifier Pad Frame	HE360, HE365, HE265, HE26
32001652-001	HE220, HE225, HE260, HE265 Transformer (10VA)	HE260, HE220, HE225, HE265
32001660-001	HE360 Base Assembly	HE360
32001660-002	HE365 Base Assembly	HE365
32001663-001	HE360 Cover Assembly with Thumb Screw	HE360
32001663-002	HE365 Cover Assembly with Thumb Screw	HE365
32001664-001	HE360, HE365 Fan Shroud	HE360, HE365
32001670-001	HE360, HE365 Motor Mount	HE360, HE365
32001676-001	HE360, HE365 Printed Wiring Board Assembly	HE360, HE365
32001752-001	HE220, HE225, HE260, HE265, HE360, HE365 Hardware Kit for Solenoid Assembly (does not include solenoid valve)	HE260, HE360, HE365, HE220, HE225, HE265
32001754-001	Current Sensing Relay	HE260, HE360, HE365, HE220, HE225, HE265
32005376-001	HE360, HE365 Fan Motor	HE360, HE365
32006134-001	HE160 Basin	HE160
32006135-001	HE160 Lid	HE160
32006136-001	HE160 Disk Array	HE160
32006137-001	HE160 24V Motor	HE160

Humidifiers—Replacement Parts, Pads and Filters

OS Number	Description	Used With
32006138-001	HE160 Motor Plate	HE160
32006139-001	HE160 Inlet Plate	HE160
32006140-001	HE160 Drain Cap	HE160
32006141-001	HE160 Valve Assembly	HE160
32006437-001	Replacement Cap for R.O. filter housing, used with HE440 and HE480	HE440
32006438-001	Replacement Chlorine Filter Housing, used with HE440 and HE480	HE440
32006439-001	Hand Tool for loosening filter housing, used with HE440 and HE480	HE440
32006440-001	Solenoid wiring cable with plug, used with HE440 and HE480	HE440
32006441-001	System Fan Wiring Cable with plug, used with HE440 and HE480	HE440
32006442-001	Thermal fan switch, used with HE440 and HE480	HE440
32006443-001	120V/24V NEMA transformer, used with HE440	HE440
32006444-001	Solenoid Valve, used with HE440 and HE480	HE440
32006445-001	Relay, used with HE440 and HE480	HE440
32006446-001	Float - Long Assembly, used with HE440 and HE480	HE440
32006447-001	Float - Short Assembly, used with HE440 and HE480	HE440
32006448-001	On Light Replacement, 120V used with HE440	HE440
32006449-001	Heating Element, 120V, 1500W used with HE440	HE440
HC40A1009	HE420, HE460 Automatic Flushing Timer	HE460, HE420

Humidistats

H1008 Automatic Humidity Controls



H1008A,D provides automatic control for by-pass flow-through, powered flow-through, steam and drum humidifiers in central heating systems. H1008D also provides automatic control for dehumidification using heat/energy recovery ventilators or dehumidifiers.

- Patented Honeywell HumidiCalc+™ Software eliminates need for an outdoor sensor on the most common single-stage, gas or oil forced-air equipment.
- Combination temperature and humidity sensor accurately determines the dewpoint at the control location.
- With the use of the C7089H Outdoor Temperature Sensor, the H1008A,D also provides automatic humidity control in heat pump applications.
- Automatically adjusts humidity level based on the frost factor set by the homeowner.
- System status light indicates normal operation, test mode and fault indication.

Dimensions, Approximate: 4 7/32 in. high, 5 1/4 in. wide, 1 31/32 in. deep (107 mm high, 133 mm wide, 50 mm deep)

Differential: ± 2.5 F, ±1.4 C RH

Temperature Ratings: 45 F to 88 F (7 C to 31 C)

Voltage (Vac): 24 Vac

Electrical Ratings:

120 Vac		
at Full Load	at Locked Rotor	Resistive
2.0 A at 24 Vac, Humidifier Contacts	10.0 A at 24 Vac, Humidifier Contacts	2.0 A at 24 Vac, Humidifier Contacts

	Product Number	Application	Color	Humidity Ratings, Operating	Mounting Type	Description	Includes
*	H1008A1008	Humidification	Taupe	95 % RH at 95 F, noncondensing	Duct Mounted	Dew point control of humidification equipment.	—
*	H1008D1002	Humidification or Dehumidification	Taupe	95 % RH at 95 F, noncondensing	Duct Mounted	Dew point control of humidification and dehumidification or ventilation equipment.	Sensor for outdoor temperature compensation.

* TRADELINE models • SUPER TRADELINE models

H8908 Humidistat/Dehumidistat



The H8908B Humidistat and H8908C Dehumidistat (humidity controllers) provide automatic low voltage control of humidifiers and dehumidifiers or ventilators, respectively, in central heating and air conditioning systems. They have a spst, snap-acting, dust-proof switch and are designed for wall or surface duct mounting.

Dimensions, Approximate: 3 3/4 in. high, 3 1/4 in. wide, 2 in. deep (95.3 mm high, 82.6 mm wide, 50.8 mm deep)

Differential: 4% to 6% RH

Temperature Ratings: -20 F to +120 F (-29 C to + 49 C)

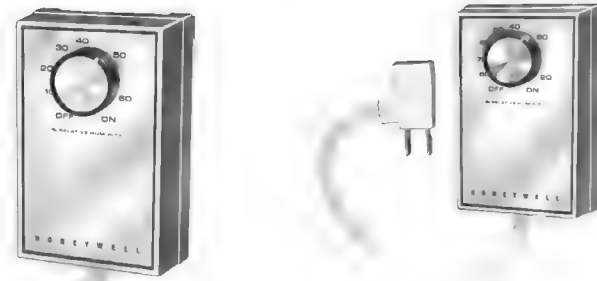
Voltage (Vac): 24 Vac

Electrical Ratings: 50 VA at 24 Vac

	Product Number	Application	Color	Humidity Ratings, Operating	Mounting Type	Description
*	H8908B1002	Humidification	Premier WhiteÆ	10% to 60% RH	Wall mounted, Duct Mounted	Humidistat
*	H8908B1010	Humidification	Taupe	10% to 60% RH	Wall mounted, Duct Mounted	Humidistat
*	H8908C1000	Dehumidification	Premier WhiteÆ	20% to 80% RH	Wall mounted, Duct Mounted	Dehumidistat
*	H8908C1018	Dehumidification	Taupe	20% to 80% RH	Wall mounted, Duct Mounted	Dehumidistat

* TRADELINE models • SUPER TRADELINE models

H46 Humidity Controller



Dimensions, Approximate: 4 11/16 in. high, 2 15/16 in. wide, 2 1/8 in. deep (119 mm high, 75 mm wide, 54 mm deep)

Differential: 4% to 6% RH

Temperature Ratings: 50 F to 125 F (10 C to 52 C)

Voltage (Vac): 24 Vac, 120 Vac, 240 Vac

Provide automatic control of a humidifier or dehumidifier for dehumidification and mildew control in air conditioning systems.

- Positive ON-OFF settings permit manual operation of controlled equipment.
- Impact-resistant, molded plastic cover mounts on wall.
- Fully enclosed, dust free, spst, snap-acting switch.
- Sensing element of thin, moisture sensitive nylon ribbon provides reliable operation even when ambient temperature conditions change.

Electrical Ratings:

	120 Vac			240 Vac		
	at Full Load	at Locked Rotor	Resistive	at Full Load	at Locked Rotor	Resistive
H46C,E,N	7.5 A	30.0 A	12.0 A	3.8 A	15.0 A	6.0 A
H46D	4.4 A	26.4 A	12.0 A	2.2 A	13.2 A	6.0 A

	Product Number	Application	Color	Humidity Ratings, Operating	Description
*	H46C1000	Dehumidification	Beige	20% to 80% RH	Wall mounted Dehumidistat
*	H46C1166	Dehumidification	Premier White®	20% to 80% RH	Wall mounted Dehumidistat
*	H46D1032	Humidification	Beige	10% to 60% RH	Wall mounted Humidistat
*	H46D1214	Humidification	Premier White®	10% to 60% RH	Wall mounted Humidistat
*	H46E1013	Dehumidification	Beige	20% to 80% RH	Dehumidistat with plug for window Air Conditioner or portable dehumidifier
	H46N1005	Dehumidification	—	35% RH Fixed	Wall mounted Dehumidistat
* TRADELINE models • SUPER TRADELINE models					

Humidistats

H49; H69 Humidity Controllers



Mount in return air duct of a forced air heating system to control a central humidifier or dehumidifier.

- External knob on front of case provides control point adjustment.
- Humidity sensing element is moisture-resistant nylon ribbon wound around three bobbins.

Dimensions, Approximate: 3 3/4 in. high, 2 3/8 in. wide, 2 1/2 in. deep (95.3 mm high, 60.3 mm wide, 63.5 mm deep)

Differential: 4% to 6% RH

Temperature Ratings: 60 F to 125 F (16 C to 52 C)

Voltage (Vac): 120 Vac, 240 Vac

Electrical Ratings:

	120 Vac			240 Vac		
	at Full Load	at Locked Rotor	Resistive	at Full Load	at Locked Rotor	Resistive
H49A	7.5 A	45.0 A	15.0 A	3.8 A	22.8 A	7.5 A
H49B	4.4 A	26.4 A	15.0 A	2.2 A	13.2 A	7.5 A
H69A	7.5 A	45.0 A	15.0 A	3.0 A	18.0 A	10.0 A

	Product Number	Application	Color	Humidity Ratings, Operating	Description
*	H49A1019	Humidification	Gray	15% to 50% RH	Duct Mounted Humidistat
*	H49B1017	Humidification	Gray	15% to 50% RH	Duct mounted humidifier controller with sail switch.
*	H69A1014	Humidification or Dehumidification	Gray	35% to 65% RH	Humidistat for Humidification or Dehumidification
* TRADELINE models • SUPER TRADELINE models					

H600 Humidity Controllers



Operates humidification equipment on RH fall or dehumidification equipment on RH rise.

- Sensing element of thin, moisture sensitive nylon ribbon provides reliable operation even when ambient temperature conditions change.
- Fully enclosed, dust free, spdt, snap-acting switch.
- Removable setting knob prevents tampering.
- Mount vertically on 2 x 4 in. junction box (not to be duct mounted).
- Includes alternate scale and faceplate for horizontal mounting.

Dimensions, Approximate: 6 3/16 in. high, 3 3/8 in. wide, 2 1/4 in. deep (157 mm high, 86 mm wide, 57 mm deep)

Differential: 5% RH

Temperature Ratings: 50 F to 125 F (10 C to 52 C)

Voltage (Vac): 24 Vac, 120 Vac, 240 Vac

Electrical Ratings:

	120 Vac			240 Vac		
	at Full Load	at Locked Rotor	Resistive	at Full Load	at Locked Rotor	Resistive
Dehumidifier Contacts	7.5 A	30 A	12 A	3.8 A	15 A	6 A
Humidifier Contacts	4.4 A	26.4 A	12 A	2.2 A	13.2 A	6 A

	Product Number	Application	Color	Humidity Ratings, Operating	Mounting Type	Description
*	H600A1014	Humidification or Dehumidification	Gray	20% to 80% RH	Wall mounted	Humidistat for Humidification or Dehumidification
* TRADELINE models • SUPER TRADELINE models						

C7089H Outdoor Sensor



Senses outdoor temperature for display H1008 HumidiCalc-Automatic Humidistat.

- Encapsulated to protect against water and contaminants.
- Mounting clip allows easy sensor positioning on siding or soffit.
- Includes 60 in. leadwires.
- May be located up to 200 feet away from H1008 Humidistat.
- Positive temperature coefficient thermistor sensor.
- Factory calibrated; no field calibration required.

Dimensions, Approximate: 1-1/2 in. x 1/4 in. (38 mm x 6 mm)

	Product Number	Application	Humidity Ratings, Operating	Description	Includes
*	C7089H1007	Outdoor temperature sensor	5% to 95 % RH, noncondensing	Outdoor temperature sensor to be used with the H1008A.	6 in. leadwires
* TRADELINE models • SUPER TRADELINE models					

Humidity Control Parts

OS Number	Description	Used With
135691D	Faceplate for H600	H600
190523BA	Cover assembly and adjusting knob for H600	Faceplate for H600H600
200137A	Knob Assembly for H46C or H205	Cover assembly and adjusting knob for H600H46C, H205
139401	Nickel Plated Brass Terminal Block for use with H600	Knob Assembly for H46C or H205H600

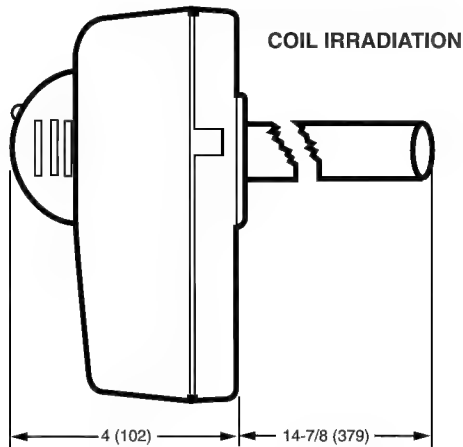
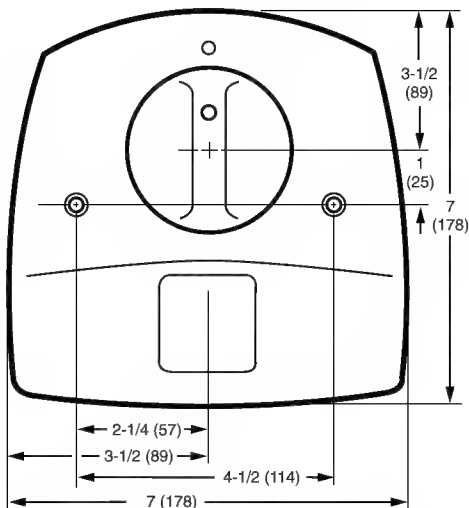
UV100A Ultraviolet Air Treatment Systems



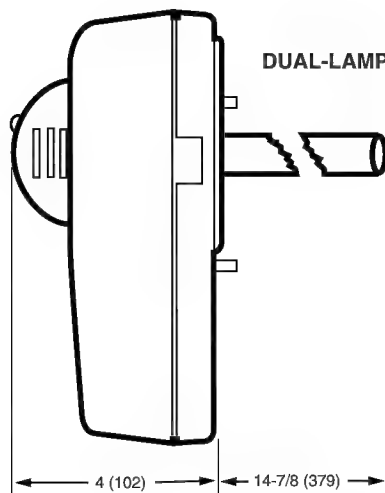
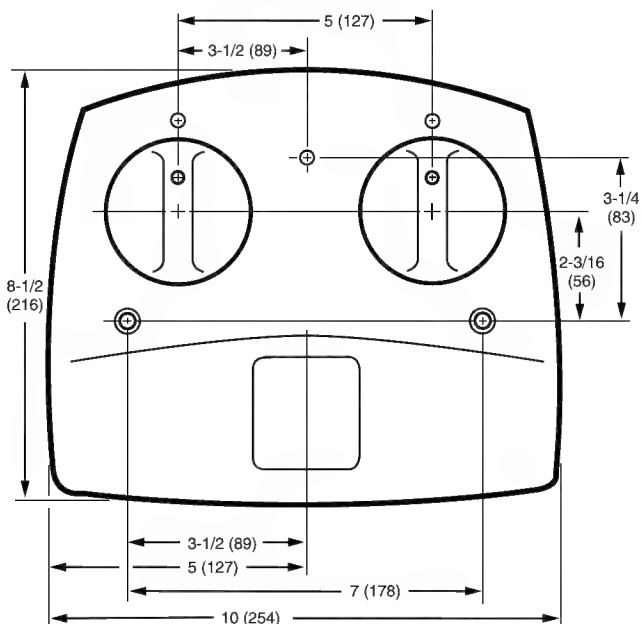
UV100A Ultraviolet Air Treatment System is available for two applications. Return air applications reduce airborne contaminants such as bacteria. Coil irradiation units prevent biologicals such as mold from growing on the air conditioning coil. The UV100A1000 Single Lamp unit has a moderate kill rate against airborne bacteria in return air applications. The UV100A1018 Dual Lamp unit has a high kill rate against airborne bacteria in return air applications. The UV100A1059 CoilPlus and UV100A2008 (240V) units can be mounted in either the return air duct where they have a moderate kill rate or downstream from the air conditioner cooling coils in the HVAC system where they reduce mold on the cooling system components and stops it from growing back.

- UV-C light kills airborne bacteria and surface mold.
- UV lamp does not produce ozone.
- Easy lamp maintenance with quick and easy lamp replacement.
- Sealed unit design prevents accidental installer and homeowner contact with high voltage and ultraviolet rays.
- Safe design prevents lamps from lighting unless the base is correctly mounted on the HVAC duct.
- Light pipe to safely view the lamp operation.
- Power cord that plugs into 120 Vac electrical outlet.
- 240 V model available.

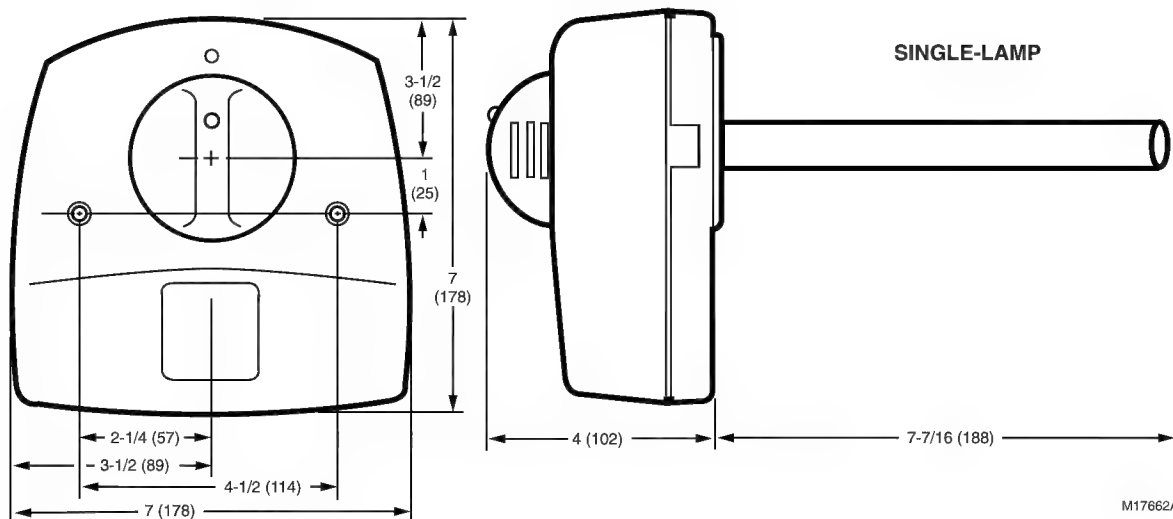
Dimension Diagrams



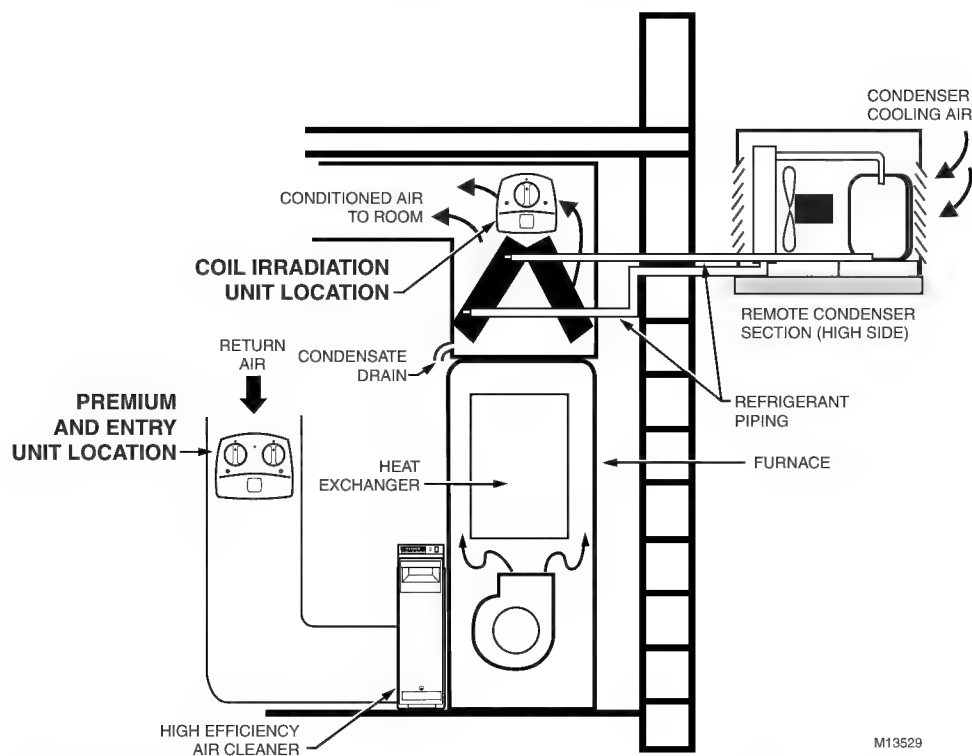
M17661A



M17663A



Possible mounting locations for Ultraviolet Air Treatment Systems.



Operating Temperature

Inside Duct: 30 F to 140 F (-2 C to +60 C)

Outside Duct: 30 F to 104 F (-2 C to +40 C)

Replacement Parts:

UC100A1005 Replacement Lamp for UV100A1000

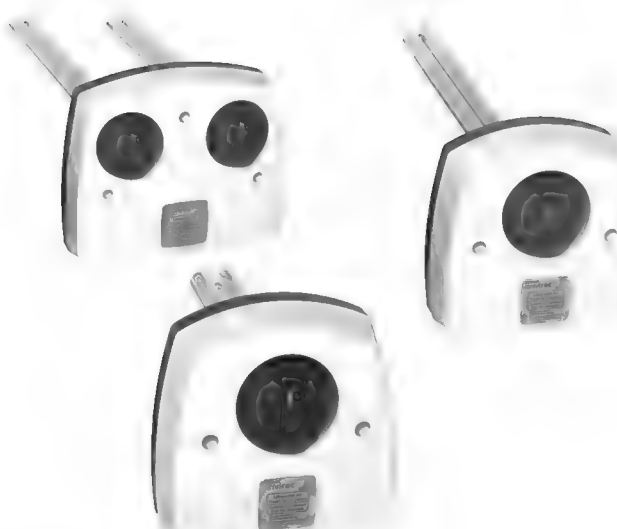
Ultraviolet Systems

	Product Number	Electrical Ratings (Vac)	Electrical Ratings (Watts)	Type	Contaminants Reduced	Description
	UV100A1000	120 Vac	18 W	Return Air Application	Airborne Bacteria	Ultraviolet Air Treatment System, Single Lamp Return Air Model
	UV100A1018	120 Vac	36 W	Return Air Application	Airborne Bacteria	Ultraviolet Air Treatment System, Dual Lamp Return Air Model
	UV100A1059	120 Vac	36 W	Coil Irradiation Application Return Air Application	Surface Mold Airborne Bacteria	Ultraviolet Air Treatment System, CoilPlus Model
	UV100A2008	240 Vac	36 W	Coil Irradiation Application Return Air Application	Surface Mold Airborne Bacteria	Ultraviolet Air Treatment System, CoilPlus Model
* TRADELINE models • SUPER TRADELINE models						

UV100A Parts List

Description	Replacement Lamps	Wattage
UV100A1000 Single Lamp Return Air Unit	UC100A1005	18W
UV100A1018 Two Lamp Return Air Unit	UC100A1013 (twin Pack (two lamps required))	36W (each)
UV100A1059 Coil Plus Irradiation Unit	UC100A1054	36W
W8600A1007 AIRWATCH® Indicator (optional)		
32005530-001 Duct Board Adaptor Kit		

UV100E Enviracaire Elite™ Ultraviolet Air Treatment Systems



The SmartLamp Ultraviolet Air Treatment System is available in three models:

The Single Lamp and Dual Lamp Return Air units are mounted in the return air duct of the HVAC system. The units have high-efficiency performance against airborne bacteria in return air applications. Without Enviracom hooked up they monitor airflow through ductwork using supplied airflow sensor mounted to backside of unit. It operates lamps when air is flowing (120 cfm minimum), leaving lamps on for 40 minutes after airflow stops. If airflow resumes during the 40 minutes, the timer resets to 40 minutes. When no airflow is detected for 40 minutes, the lamps turn off until the next occurrence of airflow. With Enviracom hooked up it monitors thermostat load information instead of using airflow sensor to operate on and off.

Operating Temperature

Inside Duct: 30 F to 140 F (-2 C to +60 C)

Outside Duct: 30 F to 104 F (-2 C to +40 C)

The Coil Irradiation unit is mounted downstream or upstream from the air conditioner evaporator coils in HVAC system. It reduces mold growth and spores on duct surfaces, coils and drip pans. It does not use an airflow sensor. Without Enviracom hooked up it operates steady on/off cycle - three hours on, three hours off for a total two-year life cycle. With Enviracom hooked up it operates three hours on and three hours off during times when the cooling system may be exposed to moisture, including when the control sees a cooling call and for 30 days after the last cooling occurred. This operation extends the lamp life beyond two years.

- Extended lamp life.
- SmartLamp Control Algorithm determines UV lamp usage by optimizing lamp run time and lamp starts.
- SmartLamp LED shows lamp life and replacement.
- Reduced power consumption.
- Communicates with other home appliances through three-wire communications bus.
- Automatic brownout and high temperature protection for UV lamps.
- Dual-purpose reset button: Commands lamps on with a single one-second push and Resets internal lamp run-time timer after lamp replacement with extended five-second hold.
- UV-C light kills airborne and surface bacteria.
- UV lamp does not produce ozone.
- Easy lamp maintenance with quick and easy lamp replacement.
- Sealed unit design prevents accidental installer and homeowner contact with high voltage and ultraviolet rays.
- Safe design prevents lamps from lighting unless the base is correctly mounted on the HVAC duct.
- Light pipe to safely view the lamp operation.
- Power cord that plugs into 120 Vac electrical outlet.
- Bold Enviracaire Elite. look with blue and white styling.
- Five-year limited warranty.

Dimension Diagrams

See diagrams on page 314

Possible mounting locations for Ultraviolet Air Treatment Systems.

See diagram on page 315

Replacement Parts:

UC100E1006 Replacement Lamp for UV100E1001, UV100E1043

Product Number	Electrical Ratings (Vac)	Electrical Ratings (Watts)	Type	Contaminants Reduced	Description
UV100E1043	120 Vac	18 W	Return Air Application	Airborne Bacteria	Enviracaire Elite SmartLamp Ultraviolet Air Treatment System, Single Lamp Return Air Model
UV100E2009	120 Vac	36 W	Return Air Application	Airborne Bacteria	Enviracaire Elite SmartLamp Ultraviolet Air Treatment System, Dual Lamp Return Air Model
UV100E3007	120 Vac	36 W	Coil Irradiation Application	Surface Mold	Enviracaire Elite SmartLamp Ultraviolet Air Treatment System, Coil Irradiation Model

* TRADELINE models • SUPER TRADELINE models

UV100E Parts List

Description	Replacement Lamps	Wattage
UV100E1043 Single Lamp Return Air Unit	UC100E1006	18W
UV100E2009 Two Lamp Return Air Unit	UC100E1014 (twin Pack (two lamps required))	36W (each)
UV100E3007 Coil Irradiation Unit	UC100E1030	36W
W8600A1007 AIRWATCH® Indicator (optional)		

Ultraviolet Replacement Lamps

Replacement Lamp Ultraviolet Air Treatment System

Product Number	Electrical Ratings (Watts)	Type	Description
UC100A1005	18 W	Replacement Lamp	Replacement Lamp for UV100A1000
UC100A1013	36 W	Replacement Lamp	Replacement Lamps. Twin Pack for UV100A1018
UC100A1021	25 W	Replacement Lamp	Replacement Lamp for UV100A1026
UC100A1054	36 W	Replacement Lamp	Replacement Lamp for UV100A1059
UC100E1006	18 W	Replacement Lamp	Replacement Lamp for UV100E1001 and UV100E1043
UC100E1014	36 W	Replacement Lamp	Replacement Lamps. Twin Pack for UV100E1018 and UV100E2009
UC100E1022	25 W	Replacement Lamp	Replacement Lamp for UV100E1027
UC100E1030	36 W	Replacement Lamp	Replacement Lamp for UV100E3007 and UV100E1035
* TRADELINE models • SUPER TRADELINE models			

Ultraviolet Air Treatment System Accessory

OS Number	Description	Used With
32005530-001	Ductboard Adapter Kit for UV100	Ductboard Adapter Kit provides parts needed to mount UV Air Treatment Systems on duct board

ER150; ER200 Energy Recovery Fresh Air Ventilation Systems



Type: Energy Recovery Ventilator
Core Type: Enthalpy cross flow core
Defrost Controls: Built-in Defrost

Energy Recovery Ventilators provide proper levels of ventilation with energy savings by transferring heat and moisture between the exhaust and fresh air streams.

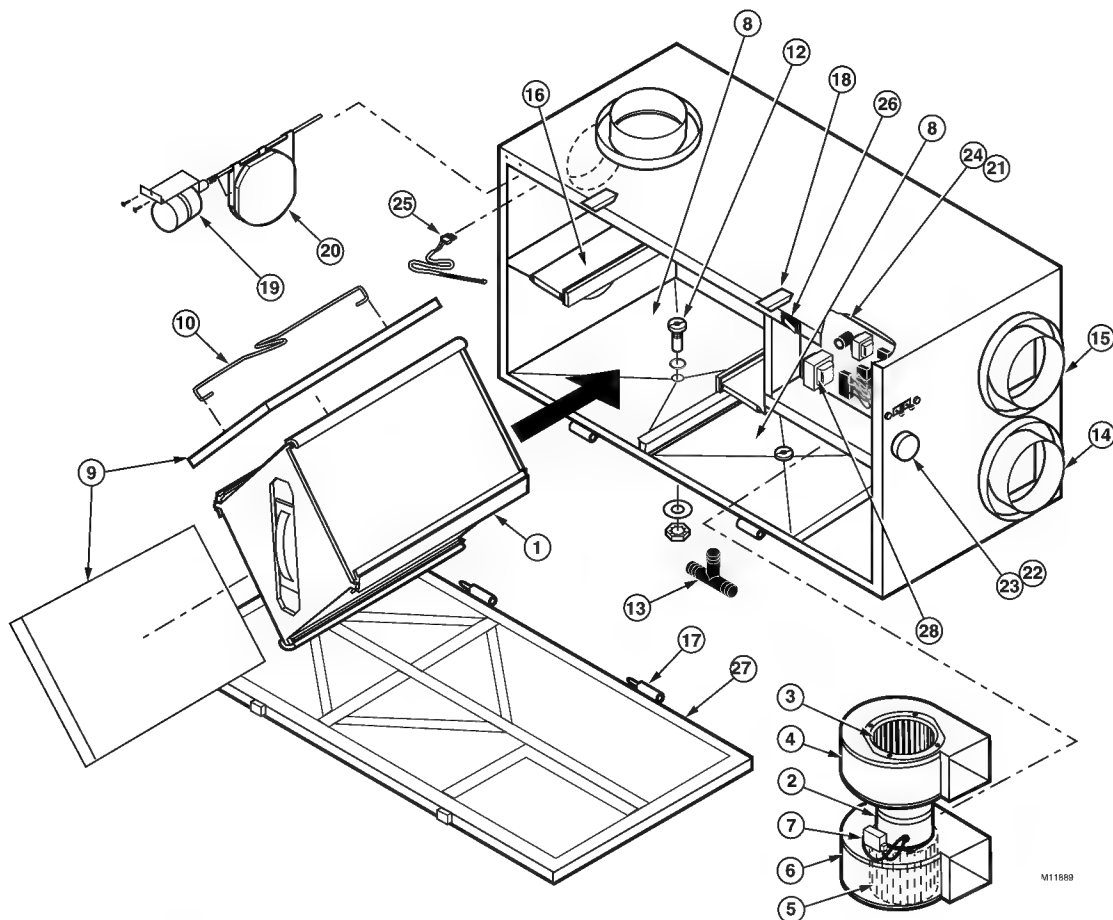
- Includes heat/energy transfer core, prefilters, and fan and blower assembly.
- Provides ventilation that helps contractors meet ASHRAE 62-89.
- Automatic, economical, built-in defrost available for operation to design temperatures of -40F.
- Electronic ventilation fan timer option.
- Low voltage, high-speed override.
- Variable fan speed control.
- Easy-to-clean with a vacuum, cross-flow enthalpic core assures years of trouble-free operation.
- Insulated cabinet.
- Rugged steel cabinet.
- Quiet operation.
- Permanent (washable) prefilters.
- Integral balancing dampers.
- Includes vibration isolation hardware and duct collars.

Electrical Ratings: 120 Vac, 60 Hz
Moisture Transfer Ratio: 0.26
Temperature Recovery: 0.79

	Product Number	Airflow Capacity (external static pressure)	Current Draw, Nominal		Description
			Minimum Speed	Maximum Speed	
*	ER150B2006	150 cfm (0.1 in. wc)	1.7 A	0.7 A	Energy Recovery Ventilator 150 CFM
*	ER150C2004	150 cfm (0.1 in. wc)	1.7 A	0.7 A	Energy Recovery Ventilator 150 CFM, no defrost
*	ER200B2006	208 cfm (0.2 in. wc)	1.7 A	0.8 A	Energy Recovery Ventilator 200 CFM
*	ER200C2004	208 cfm (0.2 in. wc)	1.7 A	0.8 A	Energy Recovery Ventilator 200 CFM, no defrost
* TRADELINE models • SUPER TRADELINE models					

Fresh Air Ventilation

ER150B and ER200B exploded View. Part Numbers are keyed to Parts List.



ER150B and ER200B Parts List

No.	Description	Part Number for	
		ER150B/C	ER200B/C
1	Cross Flow Enthalpy Core	32002074 - 001	32002074 - 001
2	Blower Motor	208359	208359
3	Top Blower Wheel (Clockwise)	208504	208508
4	Top Blower Housing (Clockwise)	208505	208505
5	Bottom Blower Wheel (Counterclockwise)	208506	208688
6	Bottom Blower Housing (Counterclockwise)	208507	208507
7	Motor Capacitor	209711	209711
8	Condensate Pan, Left or Right	208509	208509
8	Condensate Pan, Set	—	—
9	Foam Prefilter, Set of 2	32002114 - 001	32002114 - 001
10	Clip for Foam Prefilter	209722	209722
11	Circuit Board for Damper Motor	—	—
12	Drain Spout	208514	208514
13	Drain "T" Fitting	208515	208515
14	Duct Collar, Red	208516	208516
15	Duct Collar, Blue	208517	208517
16	Guide Channel, Set of 4	32002113 - 001	32002113 - 001
17	Door Hinge, Complete	208519	208519
18	Door Latch, Complete	208520	208520
19	Defrost Damper Motor, Power Return (ER150B and ER200B only)	209715	209715
20	Defrost Damper Door (ER150B and ER200B only)	208522	208522

No.	Description	Part Number for	
		ER150B/C	ER200B/C
21	Nylon Circuit Board Stand-Off	209720	209720
22	Speed Control Knob	208526	208526
23	Manual Speed Control, 5-Position	208383	208383
24	Manual Control Circuit Board	209719	209719
25	Thermistor Assembly	208365	208365
25	Temperature Sensor, Snap Disk	208381	208381
26	Door Interlock Switch	208368	208368
27	Door	208366	208366
28	Auto Transformer	209718	209718

Parts and Accessories Not Illustrated

Description	Part Number for	
	ER150B/C	ER200B/C
20/40/60 Digital Fan Timer	209599	209599
Wall Transformer, 24 Vac, 10A	209663	209663
Installation parts kit	208379	208379
Blower Interface Kit	32003248-001	32003248-001
20 minute Remote Ventilation Timer, 3-wire	32003487-001	32003487-001

HR150; HR200 Perfect Window™ Fresh Air Ventilation Systems



Heat recovery ventilators provide proper levels of ventilation with energy savings by transferring heat between the exhaust and fresh air streams.

- Includes heat transfer core, prefilters, fan and blower assembly, and defrost.
- Provides ventilation that helps contractors meet ASHRAE 62-89.
- Automatic, economical, built-in defrost for operation to design temperatures of -40F.
- Electronic ventilation fan timer option.
- Low voltage, high-speed override.
- Variable fan speed control.
- Easy-to-clean cross-flow aluminum core assures years of trouble-free operation.
- Insulated cabinet.
- Rugged steel cabinet.
- Quiet operation.
- Permanent (washable) prefilters.
- Integral balancing dampers.
- Includes vibration isolation hardware and duct collars.

Type: Heat Recovery Ventilator

Core Type: Aluminum cross flow core

Defrost Controls: Built-in Defrost

Electrical Ratings: 120 Vac, 60 Hz

Moisture Transfer Ratio: —

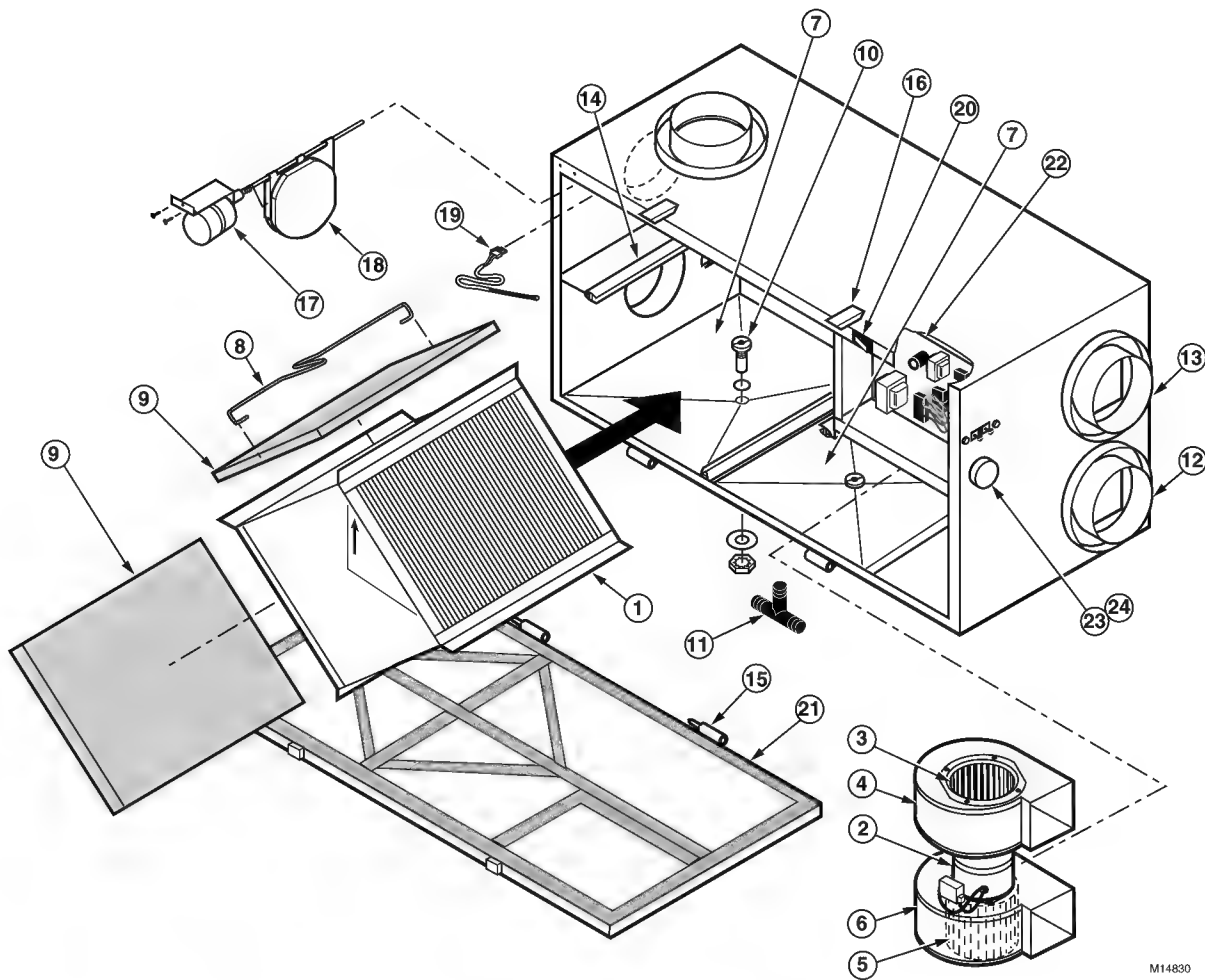
Temperature Recovery: 0.8

Product Number	Airflow Capacity (external static pressure)	Current Draw, Nominal		Description
		Minimum Speed	Maximum Speed	
* HR150B1005	188 cfm (0.2 in. wc)	1.7 A	0.7 A	Heat Recovery Ventilator 150 CFM
* HR200B1005	206 cfm (0.2 in. wc)	1.7 A	0.8 A	Heat Recovery Ventilator 200 CFM

* TRADELINE models • SUPER TRADELINE models

Fresh Air Ventilation

HR150B and HR200B exploded View. Part Numbers are keyed to Parts List.



M14830

HR150B and HR200B Parts List

No.	Description	Part Number for	
		HR150B	HR200B
1	Heat Transfer Core, Aluminum with Plastic Frame	209746	209746
2	Blower Motor	208359	208359
3	Top Blower Wheel (Clockwise)	208504	208508
4	Top Blower Housing (Clockwise)	208505	208505
5	Bottom Blower Wheel (Counterclockwise)	208506	208688
6	Bottom Blower Housing (Counterclockwise)	208507	208507
7	Condensate Pan, Left or Right	208509	208509
8	Filter clip, wire	209722	209722
9	Filter, foam, set of 2 includes: (1) 11.75 x 9.375 x .75 and (1) 11.75 x 8 x .75	209723	209723
10	Drain Spout	208514	208514
11	Drain "T" Fitting	208515	208515
12	Duct Collar, Red	208516	208516
13	Duct Collar, Blue	208517	208517
14	"H" Channel, 13-1/4 in. (340 mm)	208518	208518
15	Door Hinge, Complete	208519	208519
16	Draw Latch, Complete	208520	208520
17	Defrost Damper Motor, bi-directional	209715	209715
18	Defrost Damper Door	208522	208522

Ventilation Accessories

No.	Description	Part Number for	
		HR150B	HR200B
19	Thermistor Assembly	208365	208365
20	Door Interlock Switch	208368	208368
21	Door	208366	208366
22	Manual Control Circuit Board	209719	209719
23	Manual Speed Control, 5-Position	208383	208383
24	Speed Control Knob	208526	208526

*Includes magnehelic pressure gauge and two 6 in. flow measuring stations.

Parts and Accessories Not Illustrated

Description	Part Number for	
	HR150B	HR200B
24/40/60 Digital Fan Timer	209599	209599
Wall Transformer, 24 Vac, 10A	209663	209663
Installation parts kit	208379	208379
Weather Hood Kit, includes 2 weather hoods	32003214-001	32003214-001
Blower Interface Kit	32003248-001	32003248-001
20 minute Remote Ventilation Timer, 3-wire	32003487-001	32003487-001

Residential Ventilation Accessories

OS Number	Description	Used With
208372	Airflow Balancing Kit for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208373	Diffuser--4 in. diameter for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208374	Diffuser--5 in. diameter for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208375	Diffuser--6 in. diameter for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208378	Ducting Elbow, 4 in. plastic for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208379	Installation Parts Kit for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
209599	Digital Fan Timer for HR150B, HR200B	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
209663	24 Vac Class II Transformer for use with 209599 Digital Fan Timer. Powers up to ten timers.	24 Vac HR150B, HR200B, ER150B, ER150C, ER200C, ER200B, 209599
209718	Auto Transformer	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
32003214-001	Weather Hood Kit	HR150B, HR200B, ER150B, ER150C, ER200C
32003248-001	Blower Interface Kit	HR150B, HR200B, ER150B, ER150C, ER200C
32003487-001	20 Minute Digital Fan Timer	HR150B, HR200B, ER150B, ER150C, ER200C

Residential Ventilation Replacement Parts

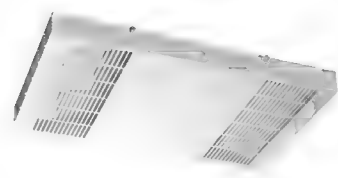
OS Number	Description	Used With
207975	Vent Switch HR150, HR200	
208357	Aluminum Heat Transfer Core	HR150B, HR200B
208359	Blower Motor for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208363	Digital Control Board - Microprocessor Circuit Board, 4 Terminal	HR150C, HR200C
208364	Control Panel - Base Module, 4 Terminal	HR150C, HR200C
208365	Thermister Assembly for HR150B, HR200B, ER150B, ER200B	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208366	Door for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208368	Door Interlock Switch for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B

Ventilation Accessories

OS Number	Description	Used With
208369	Auto Transformer	HR150C, HR200C
208383	Manual Speed Control, 5-position, for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208504	Top Blower Wheel (Clockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, ER150B, ER150C
208505	Top Blower Housing (Clockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208506	Bottom Blower Wheel (Counterclockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, ER150B, ER150C
208507	Bottom Blower Housing (Counterclockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208508	Top Blower Wheel (Clockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR200B, ER200C, ER200B
208509	Condensate Pan, left or right, for HR150B, HR200B, ER150B, ER200B	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208514	Drain Spout Assembly Kit for HR150B, HR200B, ER150B, ER200B	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208515	Drain "T" Fitting HR150B, HR200B, ER150B, ER200B	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208516	Duct Collar, Red, 6", Sgl Sided for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208517	Duct Collar, Blue, 6", Sgl Sided for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208518	H Channel, Set of 4 for HR150B, HR200B	HR150B, HR200B
208519	Door Hinge, for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208520	Door Latch, for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208521	Defrost Damper Motor, Spring Return	HR150C, HR200C
208522	Defrost Damper Door for HR150B, HR200B, ER150B, ER200B	HR150B, HR200B, ER150B, ER200B
208526	SPEED CONTROL KNOB FOR HR150, HR200, ER150, ER200.	AccessoryHR150B, HR200B, ER150B, ER150C, ER200C, ER200B
208688	Bottom Blower Wheel (Counterclockwise) for HR150B, HR200B, ER150B, ER200B, ER150C	HR200B, ER200C, ER200B
209711	Motor Capacitor for HR150B, HR200B, ER150B, ER200B, ER150C	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
209715	Defrost Damper Motor, Power Return	HR150B, HR200B, ER150B, ER200B
209719	Manual Control Circuit Board (26-223)	HR150B, HR200B
209722	Filter Clip	HR150B, HR200B, ER150B, ER150C, ER200C
209722	Clip For Foam Filter (81-007)	HR150B, HR200B
209723	Foam Filter	HR150B, HR200B
209723	Foam Prefilter (65-165R)	HR150B, HR200B
272813	HR150/HR200 Flow Measuring Station, 6 inch Preheater	HR150B, HR200B, ER150B, ER150C, ER200C, ER200B
32002074-001	Cross Flow Enthapy Core	ER150B, ER150C, ER200C
32002113-001	H Channel for ER150B, ER200B, ER150C	ER150B, ER150C, ER200C
32002114-001	Foam Prefilter	ER150B, ER150C, ER200C

Ceiling Mount Air Cleaners—Commercial

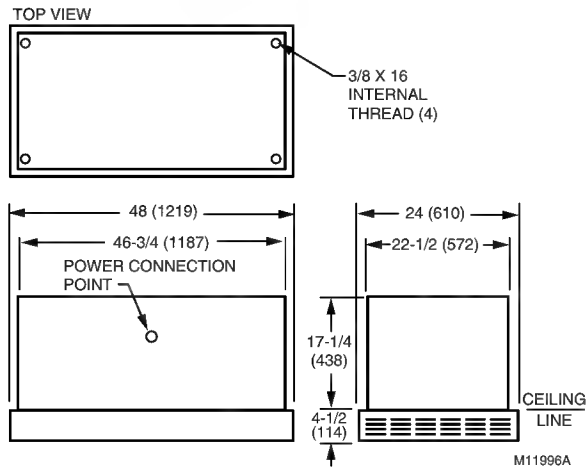
F111 In Ceiling Media Air Cleaner



Used for indoor air quality assurance in commercial, institutional, and light industrial applications.

- Low profile, large space air purifier.
- Installs into 2 ft x 4 ft T-bar ceiling.
- Whisper quiet operation.
- Coanda air flow patterns achieve rapid dilution ventilation.
- 95 percent efficient hospital grade filter reduces air-born particles.
- CPZ™ Sorbent, 39 lb (17.7 Kg) fill weight, (charcoal, zeolite and alumina potassium permanganate). Module reduces gasses and odors.

Dimension Diagram



Application: Ceiling Flush Mount

Dimensions Above Ceiling: 17 1/4 in. high, 22 1/2 in. wide, 46 3/4 in. deep (438 mm high, 572 mm wide, 1187 mm deep)

Dimensions Below Ceiling: 4 1/2 in. high, 24 in. wide, 48 in. deep (114 mm high, 610 mm wide, 1219 mm deep)

Electrical Ratings: 120 Vac, 6.5A

Frequency: 60 Hz

Mounting: Ceiling Mounted

	Product Number	Airflow Maximum Capacity		Filter Type	Includes
		(cfm)	(m ³ /hr)		
*	F111A1063	1000 cfm	1700 m ³ /hr	Includes 99.97% HEPA filter, no CPZ modules	White Lid
*	F111C1012	1000 cfm	1700 m ³ /hr	One 95% particle filter and 2 CPZ modules	White Lid
*	F111C1038	1000 cfm	1700 m ³ /hr	One 95% particle filter and 2 CPZ modules	White Lid
*	F111C1053	1000 cfm	1700 m ³ /hr	One 95% particle filter and 2 CPZ modules	White Lid
*	F111C1061	1000 cfm	1700 m ³ /hr	One 95% particle filter and 2 CPZ modules	Black Lid
* TRADELINE models • SUPER TRADELINE models					

Ceiling Mount Air Cleaners—Commercial

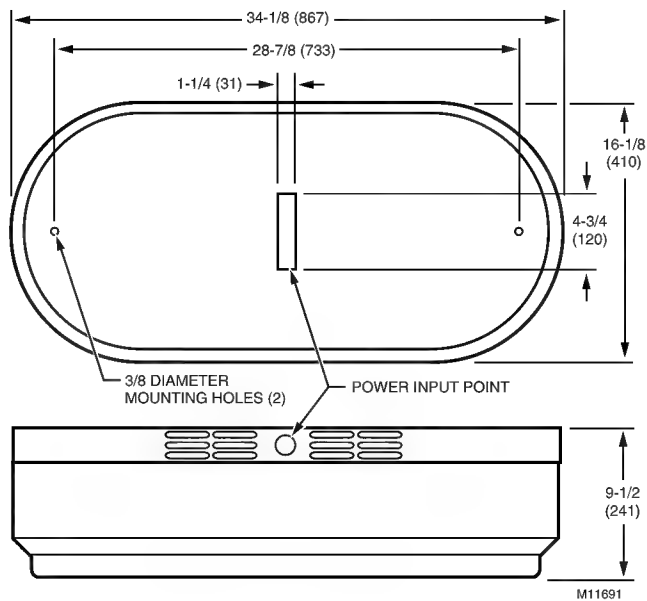
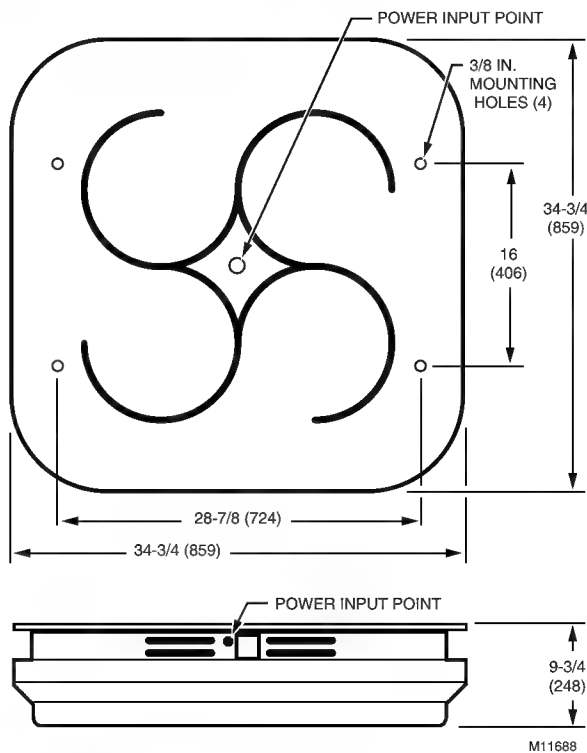
F114 Ceiling Surface Mounted Media Air Cleaner



325 cfm, 2-speed ceiling surface mounted air cleaner removes tobacco smoke, pollens, mold, spores, bacteria, viruses, animal hair and dander, general room dust, harmful fibers, and dust mites allergens from the air.

- Disposable CPZ and HEPA canisters, and prefilter.
- White cabinet with white plastic cover.
- On/Off 2-speed fan/blower, switch installed on plenum.

Dimension Diagrams



(F114C1008)
14000

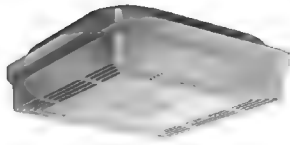
Application: Ceiling surface mount
Dimensions Above Ceiling: 9 1/2 in. high (241 mm high)
Dimensions Below Ceiling: 9 1/2 in. high, 16 1/8 in. wide, 16 1/8 in. deep (241 mm high, 410 mm wide, 410 mm deep)

Electrical Ratings: 120 Vac, 3.6A
Frequency: 60 Hz
Mounting: Ceiling Mounted

Product Number	Airflow Maximum Capacity		Filter Type	Description
	(cfm)	(m ³ /hr)		
F114A1067	325 cfm	553 m ³ /hr	99.97% HEPA filters, no CPZ canisters.	Surface mount
F114C1008	325 cfm	553 m ³ /hr	95% HEPA filter, CPZ disposable canisters	95% HEPA Filter, CPZ Disposable Canisters.

* TRADELINE models • SUPER TRADELINE models

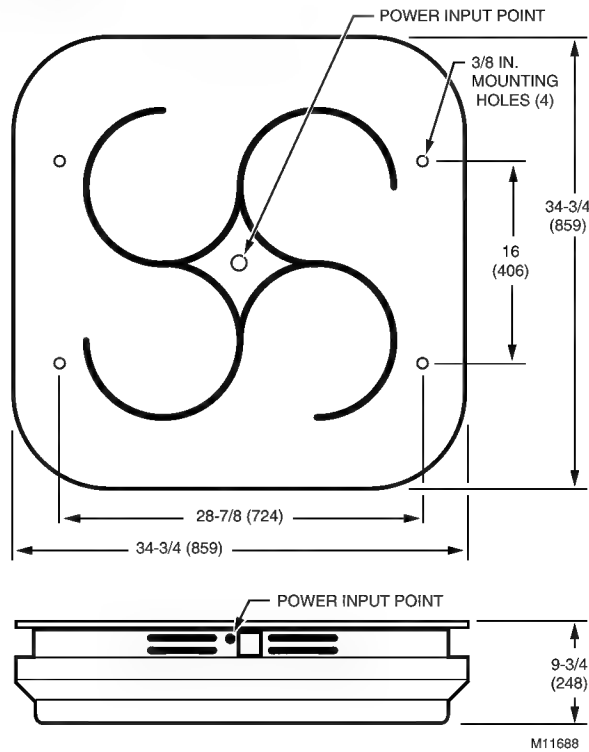
F115 Ceiling Surface Mounted Media Air Cleaner



600 cfm, single speed ceiling surface mounted air cleaner removes tobacco smoke, pollens, mold, spores, bacteria, viruses, animal hair and dander, general room dust, harmful fibers, and dust mites allergens from the air.

- Disposable CPZ and HEPA canisters, and four prefilters.
- White plastic cabinet and cover.

Dimension Diagram



Application: Ceiling surface mount

Dimensions Above Ceiling: 9 3/4 in. high (248 mm high)

Dimensions Below Ceiling: 9 3/4 in. high, 34 3/4 in. wide, 34 3/4 in. deep (248 mm high, 859 mm wide, 859 mm deep)

Electrical Ratings: 120 Vac, 7.2A

Fan Speed in Decibels: 52 dBA to 56 dBA

Frequency: 60 Hz

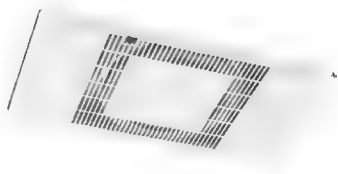
Mounting: Ceiling Mounted

Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency	Description
	(cfm)	(m ³ /hr)				
F115A1064	600 cfm	1020 m ³ /hr	99.97% HEPA filters, no CPZ canisters.	99.97% HEPA	99.97% HEPA	Surface mount
F115C1005	600 cfm	1020 m ³ /hr	95% HEPA filter, CPZ disposable canisters	95% Hospital Grade Media	95% Hospital Grade Media	Surface mount

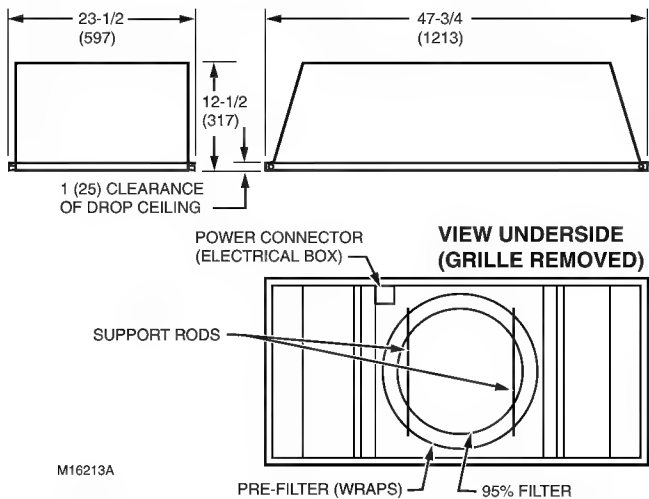
* TRADELINE models • SUPER TRADELINE models

Ceiling Mount Air Cleaners—Commercial

F118 In-Ceiling Media Air Cleaner



Dimension Diagram



425 cfm, three-speed, structural- or drop-ceiling mounted air cleaner captures airborne particles such as dust, soot, and cooking smoke from the air circulated through the 95 percent particle filter and adsorbs gases and odors from the air passing through it when equipped with two CPZ™ modules.

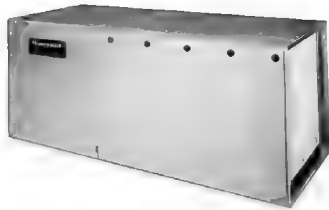
- Disposable 95 percent primary particle filter and pre-filter.
- Galvanized steel cabinet with white cover.
- Optional wall-mounted remote switch.
- Coanda air distribution draws in dirty air, cleans it and bi-directionally recirculates the filtered air throughout the space.

Application: Ceiling Flush Mount
Dimensions Above Ceiling: 12 1/2 In. high (317.5 mm high)
Dimensions Below Ceiling: recessed
Electrical Ratings: 120 Vac
Fan Speed in Decibels: 48 dBA to 65 dBA
Frequency: 60 Hz
Mounting: Duct Mounted

Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency	Description
	(cfm)	(m ³ /hr)				
F118C1009	425 cfm	723 m ³ /hr	95% Hospital Grade Media	95% Hospital Grade Media	95% Hospital Grade Media	Commercial air cleaner

* TRADELINE models • SUPER TRADELINE models

F116 Commercial Ductable Air Cleaner



Commercial ductable air cleaner removes tobacco smoke, pollens, mold, spores, bacteria, viruses, animal hair and dander, general room dust, harmful fibers, and dust mites allergens from the air.

- Maximum air volume 2300 cfm.
- Available in two or three cabinet models.
- 1 hp direct drive, 3-speed motor with thermal circuit breakers.
- Minimum static pressure 1.2 in. W.G.; maximum static pressure 1.85 in. W.G.
- Filter options include:
 - 99.97% HEPA
 - electrostatic precipitator.
 - 95% particle filter.
 - 95% or 65% ASHRAE filters.
 - CPZ sorbent modules.

Application: Duct mounted

Dimensions Above Ceiling: 26 in. high (660 mm high)

Dimensions Below Ceiling: 64 in. deep (1626 mm deep)

Electrical Ratings: 120 Vac, 23A

Frequency: 60 Hz

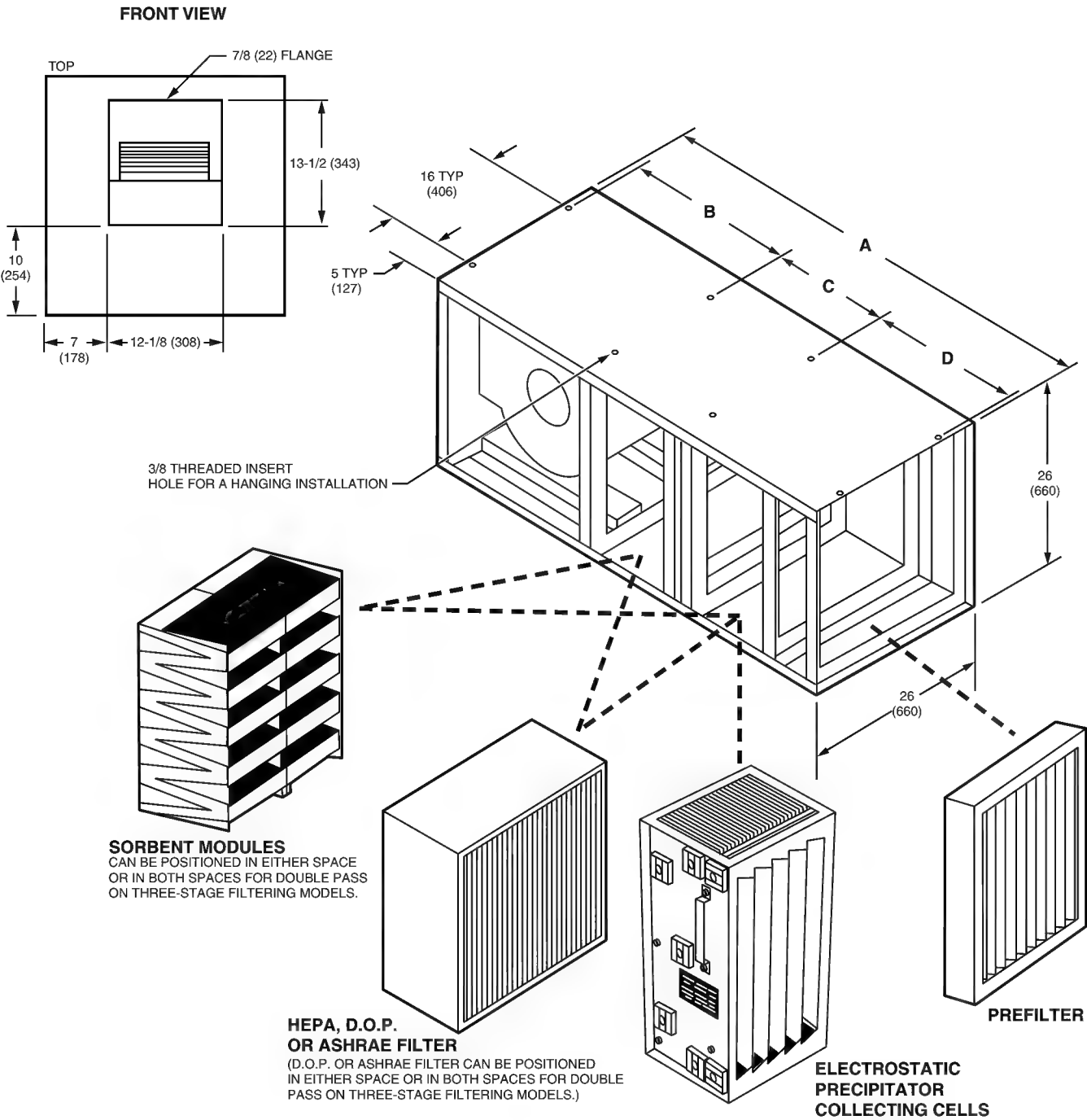
Mounting: Duct Mounted

Stages: 2 Stage

Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency	Description	Includes
	(cfm)	(m ³ /hr)					
F116A1021	1600 cfm	2940 m ³ /hr	99.97% HEPA filter, CPZ disposable canisters	99.97% HEPA	99.97% HEPA	Duct Mount	—
F116A1120	1600 cfm to 2000 cfm	2940 m ³ /hr to 3480 m ³ /hr	95% HEPA filter, 95% or 65% ASHRAE dust spot, or CPZ sorbent media disposable modules. 99.97% HEPA filter, CPZ disposable canisters	95% Hospital Grade Media	95% Hospital Grade Media	3-Stage Cabinet With Prefilter And Two Blank Frames To House One Of The Following Primary Filters: 95% At 0.3 Micron HEPA.; 95% Or 65% ASHRAE Dust Spot; Or Two Sorbent Media Disposable Modules. Primary Filter Must Be Ordered Separately.	—
F116E1100	1800 cfm to 2000 cfm	3120 m ³ /hr to 3480 m ³ /hr	Electrostatic precipitator collecting cells and 95% HEPA filter, 95% or 65% ASHRAE dust spot, or CPZ sorbent media disposable modules. 95% particle filter CPZ sorbent modules	95% Hospital Grade Media	95% Hospital Grade Media	3-Stage Cabinet With Prefilter And 2 Precipitator Collecting Cells, Which Are Factory Installed Immediately After The Prefilter. The Cells Are Available Only In The "First Filter Stage" After The Prefilter.	Cabinet with prefilter and 2 cells

* TRADELINE models • SUPER TRADELINE models

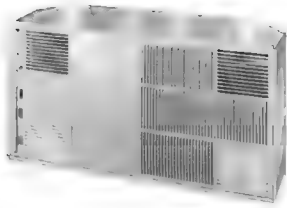
Duct Mount Air Cleaners—Commercial



MODEL	DIM. A		DIM. B		DIM. C		DIM. D	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM
THREE-STAGE FILTERING	64	1626	24 1/4	616	17	432	21 1/4	540
TWO-STAGE FILTERING	48	1219	24 1/4	616	NOT APPLICABLE		22 1/4	565

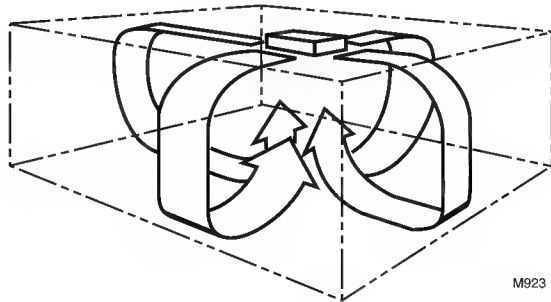
M11992

F57A Flush-Mounted Commercial Electronic Air Cleaner



Ceiling-mounted electronic air cleaner for offices, conference rooms, restaurants, lounges and other commercial applications.

- Removes tobacco smoke, cooking smoke, dust, dirt and pollen.



M923

- Dilutes gaseous contaminants by venting exhaust.
- Controls odors with optional charcoal filter.
- Includes pushbutton HI-MED-LO-OFF switch and system monitor light.
- Contains two FC37B heavy duty commercial cells.
- Safety interlock switch prevents operation when access door is removed.
- Test button proves high voltage at collector of electronic cells.
- Includes ON light, CHECK light to indicate need for service, and optional WASH light to indicate cell washing is overdue.
- Optional remote wall switch controls fan speed.
- Mounts flush with ceiling surface in place of standard 2 x 4 ft. suspended ceiling panel.
- Conforms to FCC Class B requirements for RFI.

Application: Ceiling Flush Mount

Dimensions Above Ceiling: 13 1/2 in. high, 22 1/8 in. wide, 46 in. deep (343 mm high, 570 mm wide, 1168 mm deep)

Dimensions Below Ceiling: Flush

Electrical Ratings: 120 Vac

Fan Speed in Decibels: 57 dBA to 75 dBA

Filtration Capacity: heavy duty commercial cells

Frequency: 60 Hz

Mounting: Ceiling Mounted

Replacement Parts:

136434AA F57Ab, F58F, F70C Ion Wires

190912A F57A/B Contact Board Assembly

196114B F57A Grille Assembly

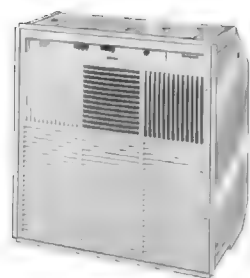
196215A F57A Motor Assembly (Includes Motor, Motor Bracket And 4 Isolation Bushings)

208427C F57A Power Supply 120v With Led and SSPI (Replaces 203361A)

	Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency	Includes
		(cfm)	(m ³ /hr)				
*	F57A1044	555 cfm to 1030 cfm	943 m ³ /hr to 1750 m ³ /hr	reusable	84% to 95%	68% to 95%	Includes on light, check light to indicate need for service, optional wash light to indicate cell washing overdue.
* TRADELINE models • SUPER TRADELINE models							

Electronic Air Cleaner—Commercial

F57B Flush-Mounted Commercial Electronic Air Cleaner



Ceiling-mounted electronic air cleaner for offices, conference rooms, restaurants, lounges and other commercial applications.

- Removes tobacco smoke, cooking smoke, dust, dirt and pollen.

Application: Ceiling Flush Mount

Dimensions Above Ceiling: 13 1/2 in. high, 22 1/8 in. wide, 46 in. deep (343 mm high, 570 mm wide, 1168 mm deep)

Dimensions Below Ceiling: Flush

Electrical Ratings: 120 Vac

Fan Speed in Decibels: 40 dBA to 68 dBA

Filtration Capacity: heavy duty commercial cells

- Dilutes gaseous contaminants by venting exhaust.
- Controls odors with optional charcoal filter.
- Includes pushbutton controls and system monitor light.
- Contains one FC37B heavy duty commercial cell.
- Heavy commercial smoke and dust deposits readily washed out of electronic cells.
- Safety interlock switch prevents operation when access door is removed.
- Test button proves high voltages at collector of electronic cells.
- Includes ON light, CHECK light to indicate need for service, and optional WASH light to indicate cell washing is overdue.
- Optional remote wall switch controls fan speed.
- Mounts flush with ceiling surface in place of standard 2 x 2 ft. ceiling panel.
- Conforms to FCC Class B requirements for RFI.

Frequency: 60 Hz

Mounting: Ceiling Mounted

Replacement Parts:

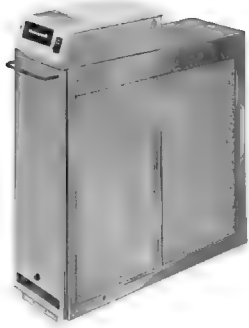
198673A F57B Motor Assembly

208427K F57B Power Supply With Led and SSPI (Replaces 203361c)

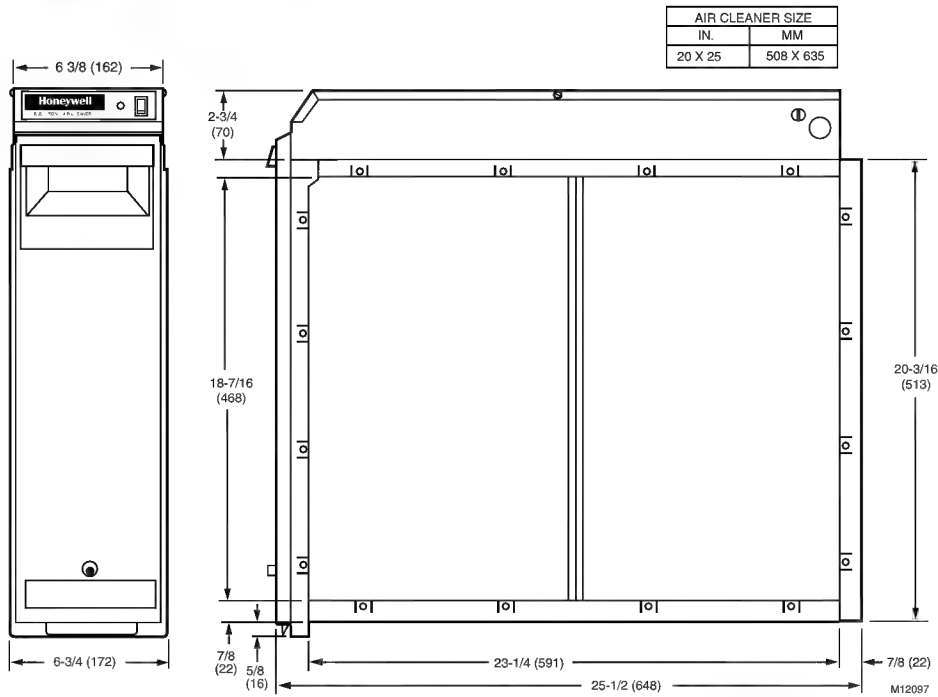
272597A F57B Isolation Bushing (4)

	Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency	Description	Includes
		(cfm)	(m ³ /hr)					
*	F57B1026	170 cfm to 420 cfm	289 m ³ /hr to 713 m ³ /hr	reusable	80% to 98%	68% to 95%	Ceiling-Mounted Electronic Air Cleaner For Offices, Conference Rooms, Restaurants, Lounges, And Other Commercial Applications	Includes push button controls, system monitor light, washable, includes on light, check light to indicate need for service, optional wash light to indicate cell washing overdue, optional remote wall switch.
* TRADELINE models • SUPER TRADELINE models								

F58 Duct-Mount Electronic Air Cleaner



Dimension Diagram



Application: Duct mounted

Dimensions, Approximate: In Duct, 20 in. high, 25 in. long
(In Duct 508 mm high, 635 Long)

Electrical Ratings: 120 Vac

Filtration Capacity: heavy duty commercial cells

Frequency: 60 Hz

Mounting: Duct Mounted

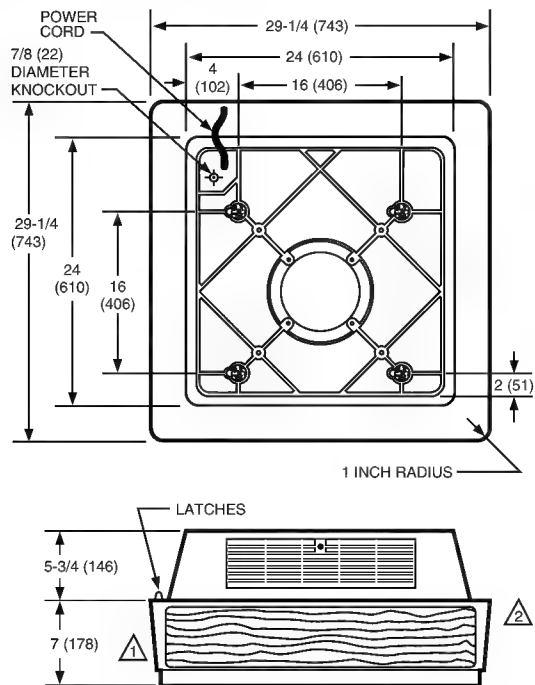
	Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Description
		(cfm)	(m ³ /hr)			
*	F58F1000	2000 cfm	3480 m ³ /hr	reusable	65% to 75%	Commercial Model In-Duct Electronic Air Cleaner
* TRADELINE models • SUPER TRADELINE models						

Electronic Air Cleaner—Commercial

F90 Self-Contained Commercial Electronic Air Cleaner



Dimension Diagram



- 1 ALLOW AT LEAST 16 INCHES (406 MILLIMETERS) FROM FRONT OF F90 TO WALL FOR INSTALLATION AND REMOVAL OF CELLS.
- 2 ALLOW AT LEAST 9 INCHES (229 MILLIMETERS) FROM BACK OF F90 TO WALL FOR REMOVAL OF COVER.

M1530

Removes airborne contaminants from the air circulated through the unit.

- Removes up to 93 percent of the staining dirt from the air, based on the National Bureau of Standards Dust Spot Method using atmospheric dust and the ASHRAE Standard 52.1-1992.
- Draws in dirty air from below, cleans it electronically and distributes the clean air throughout the space using Coanda Effect.
- Includes system monitor light.
- Heavy duty commercial cells, prefilter, and grille are removable for cleaning.
- Optional remote switch for fan speed control and activated carbon filter for odor control.
- Safety interlock switch prevents operation when cover is open or the grille is not in place.
- Mounts on the ceiling.

Application: Ceiling surface mount

Dimensions Above Ceiling: 29 1/4 in. high, 29 1/4 in. wide, 12 3/4 in. deep (743 mm high, 743 mm wide, 324 mm deep)

Dimensions Below Ceiling: 12 3/4 in. high, 29 1/4 in. wide, 29 1/4 in. deep (324 mm high, 743 mm wide, 743 mm deep)

Electrical Ratings: 120 Vac, 220 Vac

240 Vac, 50 Hz to 60 Hz

Fan Speed in Decibels: 57 dBA to 68 dBA

Filtration Capacity: heavy duty commercial cells, prefilter, removable, activated carbon filter for odor control

Frequency: 50 Hz, 60 Hz

Mounting: Ceiling Mounted

Accessories:

118636C F90 Wall Mount Assembly Kit

4074EAB F70C, F90 Ceiling Mount Kit

Replacement Parts:

202278A F90 Motor Only

202927B F90 Grey Cover

208427D F90ab Power Supply With Led and SSPI (Replaces 203361e)

4074EQP F90 Absorber Grommets (4)

Product Number	Airflow Maximum Capacity		Filter Type	Maximum Efficiency	Includes
	(cfm)	(m ³ /hr)			
* F90A1001	800 cfm to 1250 cfm	1360 m ³ /hr to 2125 m ³ /hr	reusable	81% to 93%	System monitor light, optional remote switch for fan speed and activated carbon filter for odor control
* F90A1050	800 cfm to 1250 cfm	1360 m ³ /hr to 2125 m ³ /hr	reusable	81% to 93%	System monitor light, optional remote switch for fan speed and activated carbon filter for odor control

* TRADELINE models • SUPER TRADELINE models

F112; F113 Portable Air Cleaner



Application: Portable

Dimensions, Approximate

F112: 10 in. high, 16 in. diameter (254 mm high, 406 mm diameter)

F113: 14 in. high, 16 in. diameter (356 mm high, 406 mm diameter)

The F112 (150 cfm, 2-speed) and F113 (300 cfm, 3-speed) portable air cleaners removes tobacco smoke, pollens, mold, spores, bacteria, viruses, animal hair and dander, general room dust, harmful fibers, and dust mites allergens from the air.

- F112A: Includes On/Off two-speed fan/blower and 99.97% HEPA filter, carbon prefilter.
- F112C: Includes On/Off two-speed fan/blower and 99.97% HEPA filter, CPZ canister, carbon prefilter.
- F113A: Includes On/Off three-speed fan/blower and 99.97% HEPA filter, carbon prefilter.
- F113C: Includes On/Off three-speed fan/blower and 99.97% HEPA filter, CPZ canister, carbon prefilter.
- Alabaster white plastic housing.
- F112: 80 cfm at low speed; 150 cfm at high speed.
- F113: 150 cfm at low speed; 225 cfm at medium speed, 300 cfm at high speed.

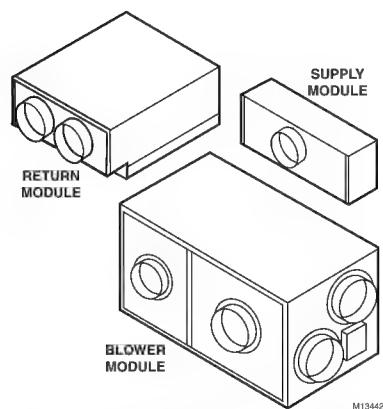
Replacement Parts:

38002 Universal Prefilter For Portable Air Cleaners (1) For F113 And (2) For F112

	Product Number	Airflow Maximum Capacity		Filter Type	Electrical Ratings	Frequency
		(cfm)	(m ³ /hr)			
*	F112A6003	150 cfm	255 m ³ /hr	99.97% HEPA filter	120 Vac	60 Hz, 1.85A
	F112C6001	150 cfm	255 m ³ /hr	99.97% HEPA filter, CPZ disposable canisters	120 Vac	60 Hz, 1.85A
	F113A6001	300 cfm	510 m ³ /hr	99.97% HEPA filter	120 Vac, 3A	60 Hz 1.5 A
	F113C6009	300 cfm	510 m ³ /hr	99.97% HEPA filter, CPZ disposable canisters	120 Vac, 3A	60 Hz 1.5 A
* TRADELINE models • SUPER TRADELINE models						

Room Cleaning System—Commercial

F120 Series Room Cleaning System



The F120 Room Air Cleaning System is designed to collect particles by circulating room air through a media filter. When equipped with an optional CPZ module, the system also adsorbs gaseous contaminants and odors.

Application: Duct mounted
Electrical Ratings: 120 Vac
Fan Speed in Decibels: Up to 52 dBA

The F120 exhaust feature is used to maintain the space at a negative pressurization relative to adjacent spaces to prevent contaminants and odors from moving into nearby areas. The air supply and return design of the F120 allows air contaminants to be filtered at the center of the room with the filtered air returned toward the sides of the room for maximum room air cleaning.

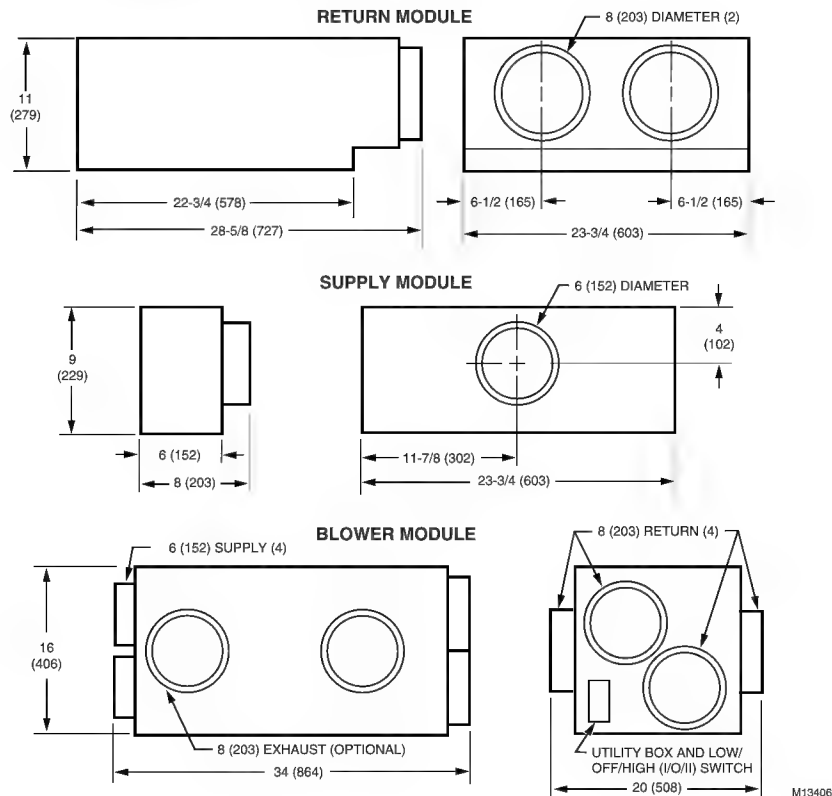
- Specifically designed for use in offices, hospitals, medical clinics, childcare centers, schools, conference rooms, copy centers, laboratories, cafeterias, and hospitality business.
- Ultra-quiet operation allows the system to be used in sound sensitive areas such as conference rooms, offices, classrooms and libraries.
- Modular design of air supply and return allows maximum flexibility when planning the appropriate air recirculation pattern to maximize overall system performance.
- Special return module filter removes both particulates and gaseous contaminants from the air stream.
- Convenient roomside service for all filters.
- Easy-to-change prefilter extends the media filter life.
- Blower module can be mounted remotely from the room to further reduce sound levels.
- Two-speed fan motor allows selecting high or low airflow speeds.
- Optional exhaust feature allows installations to maintain the space at a negative pressure with respect to surrounding areas to prevent contaminants and odors from moving into nearby areas.

Frequency: 60 Hz
Mounting: Duct Mounted

Product Number	Airflow Maximum Capacity		Filter Type	Initial Efficiency	Maximum Efficiency
	(cfm)	(m ³ /hr)			
F120A1023	900 cfm	1050 m ³ /hr	95% Hospital Grade Media	95% Hospital Grade Media	95% Hospital Grade Media
F120A1031	900 cfm	1000 m ³ /hr	99.97% HEPA filter, CPZ disposable canisters	99.97% HEPA filter, CPZ disposable canisters	99.97% HEPA filter, CPZ disposable canisters

* TRADELINE models • SUPER TRADELINE models

Dimension Diagrams



F117 Air Quality Monitor

The F117 Met One Particle Concentration Meter is a seven digit LED, laser-based sensor that includes purge filter and rechargeable batteries.

The F117 counts 0.3 micron and larger particles with sixsecond sampling. Displays concentration are in particles/ft³.

Application: Air Quality Meter

Product Number	Description
F117A2282	Met One Particle Concentration Meter. Seven Digit LED, Laser based sensor,. Includes purge filter and rechargeable 6V NiCd batteries
* TRADELINE models • SUPER TRADELINE models	

Commercial Air Cleaner Replacement Parts

OS Number	Description	Used With
21500	99.97% HEPA Filter For F112A6003	F112A6003
24000	99.97% HEPA Filter For F113A6001	F113A6001
28600	99.97% HEPA Filter For F113C6009	F113C6009
28720	99.97% HEPA Filter For F112C6001	F112C6001
38002	Universal Prefilter For Portable Air Cleaners (1) For F113 And (2) For F112	F112, F113
111690	F58C Quick-Connect Terminal	F58C
136518	F58C & F Cell Key	F58C
137266	F58F Cell Handle	F58F
190356	F59A Prefilter	F59A
190357	F59 Carbon Filter	F59
190361	F59A Male Cover Latch	F59A
190362	F59A Female Cover Latch	F59A
190382	F59A, F57A/B, F70C, F90 Control Switch (3 Speed)	F59A, F57A, F57B, F70C, F90
192141	F54C Prefilter	F54C
192287	F54C Lag Screw	F54C
195910	F57A Washable Prefilter	F57A
195911	F57A Carbon Filter	F57A
196134	F57B Mounting Spacers (4 Required)	F57B
196205	F57A Fan Blade	F57B
198571	F57B Washable Prefilter	F57B
198672	F57B Carbon Filter	F57B
199840	F58C Switch/Indicator Light	F58C
202280	F90/ F70C Fan Blade	F70C, F90
202281	F90 Motor Capacitor	F90
202289	F90 Washable Prefilter	F90
202308	F90 Grey Inlet Grille	F90
202311	F90 Motor Mounting Plate	F90
202313	F90 Black Louvers	F90
202614	F90 Carbon Filter	F90
202619	F90 Black Latch	F90
202791	F57A,B Motor Bracket (Solid Mount)	F57A, F57B
203321	F58F Switch	F58F
203372	F58C/F Washable Prefilter	F58C, F58F
220393	F57B Fan	F59B
272596	F70 Carbon Filter	F70
272602	F70C Prefilter	F70C

Commercial Air Cleaner Replacement Parts

OS Number	Description	Used With
118636C	F90 Wall Mount Assembly Kit	F90
118965A	F70, F57A1002 1mg 1=Ohm Resistor	F57A, F70
136376A	F58C 10 Ft Conduit	F58C
136377A	F58C Remote Mount Kit	F58C
136434AA	F57A, F57B, F58F, F70C Ion Wires	F57A, F57B, F58F, F70C
136434BA	F59A 16 in. Replacement Ionizer Wire	F59A
136572AZ	F57B1000 Transformer	F57B
137799AA	F58C Cabinet	F58C
137980A	F58C/F Test Button	F58C, F58f
138889A	F58C, F59A, F70C, F90 Contact Board Assembly	F58C, F59A, F70C, F90
190097B	F70C, F58B, F90A Wall Mounted Remote Control 120v Model Only	F70C, F58B, F90A
190912A	F57A/B Contact Board Assembly	F57A, F57B
196114B	F57A Grille Assembly	F57A
196215A	F57A Motor Assembly (Includes Motor, Motor Bracket And 4 Isolation Bushings)	F57A
198673A	F57B Motor Assembly	F57B
202278A	F90 Motor Only	F90
203305AB	F58F Access Door	F58F
203318A	F58F Power Box Cover And Label	F58F
203329A	F58F Rear Terminal Board Assembly	F58F
203329B	F58F Front Terminal Board Assembly	F58F
203365A	F58F 220V Transformer	F58F
208414A	F58F Power Supply 120v 60 Hz (Replaces 203101A)	F58F
208417Q	F58F Power Box Assembly 120v 60 Hz (Replaces 203314A)	F58F
208425C	F59A Solid State Power Supply (Replaces 220429exc)	F59A
208425G	F57A, F70C, F54C Solid State Power Supply (Replaces 220429axb / 220429lkb)	F57A, F70C, F54C
208427C	F57A Power Supply 120v With Led and SSPI (Replaces 203361a)	F57A
208427D	F90 Power Supply With Led and SSPI (Replaces 203361e)	F90A, F90B
208427K	F57B Power Supply With Led and SSPI (Replaces 203361c)	F57B
208427Q	F57A Power Supply 240v With Led and SSPI (Replaces 203361b, 203314a)	F57A
272597A	F57B Isolation Bushing (4)	F57B
32000195-001	Media Filter/95% Hospital Grade	
32000196-001	Media Filter 95% ASHRAE For F116	F116
32000199-001	EAC Cell For F116E1001 (1 Only, 2 Required)	F116E
32000200-001	Media Prefilter / 25-30% ASHRAE For F116	F116
32000201-001	99.97% HEPA For 10500	10500
32000203-001	95% Media Filter For F111	F111
32000204-001	99.97% HEPA/Media Filter For F111	F111
32000207-001	99.97% HEPA 12500 Series 62500	62500
32000208-001	99.97% HEPA 13500/501/503	
32000212-001	Carbon Filter Panel	
32000216-001	95% Media Filter For F113	F113
32000217-001	95% Media Filter For F114, F115	F114, F115
32000218-001	99.97% HEPA 64500	
32000226-001	10 inch Replaceable CPZ Canister (For Use With "CPZ Only" Portable Model Air Cleaner - No HEPA - Such As F113D)	
32000229-001	Prefilter F115 and F114 (4 Per Box)	F114A, F114C, F115A, F115C
32000230-001	4 Boxes Of 10 Prefilters	
32000231-001	10 Replaceable CPZ Canister (For Use With HEPA/CPZ Portable Model Air Cleaner)	
32000232-001	6 CPZ Disposable Canister For F114, F115	F114, F115

Commercial Air Cleaner Replacement Parts

OS Number	Description	Used With
32000234-001	15 Amp Speed Switch For F111C and F118	F111C, F118
32000237-001	Inlet Cover For F111C1012	F111C
32000238-001	Ceiling Tile For F111 Series Lid	F111
32000239-001	Disposable Prefilter For F111C and F111A	F111A, F111C
32000241-001	Midplate For F115C	F115C
32000245-001	Blower Wheel For F114C and F115C	F114C, F115C
32000249-001	120v 60 Hz Motor For F115C and F115A	F115A, F115C
32000250-001	120v 60 Hz Motor For F114C and F114A	F114A, F114C
32000261-001	Motor Grommet Set For F111C, F111A and F118 (3)	F111C, F111A, F118
32000267-001	Outlet Grille For F111C and F111A (2)	F111A, F111C
32000268-001	Inlet Grille For F111C and F111A (2)	F111A, F111C
32000270-001	Motor 120v 60 Hz For F111C and F111A	F111A, F111C
32000550-001	Motor Capacitor For F111C1038/ 277v, 60	F111C
32000552-001	Blower / Motor For F116	F116
32001838-001	Power Pack For F116	F116
32001839-001	220V Motor For F115	F115
32002055-001	Retainer Clips For F111 With CPZ	F111
32002268-001	120V Motor Assembly for F118C (includes Terminals and Connector)	F118C
32002415-001	120V Motor Assembly For Series II F111	Series II F111
32002415-003	277V Motor Assembly For Series II F111	Series II F111
32003392-001	Assorted Filters Contains 4 Prefilters, 4 - 95% Efficient Hospital Grade Filters And 4 CPZ Sorbent Media Canisters	
32003994-001	75 ft - 6 inch Flex Duct for F120	F120
32003994-002	75 ft - 8 inch Flex Duct for F120	F120
32004078-001	CPZ Module For F111, F116	F111, F116
32004137-001	Hi/Off/Lo Switch F120	F120
32004620-001	F120 3-Way Louver Grille	F120
32004621-001	F120 1-Way Louver Grille	F120
4074EAB	F70C, F90 Ceiling Mount Kit	F70, F90
4074EBC	F59A Interlock Switch	F59A
4074EGT	F57A,B Isolation Bushing (4)	F57A, F57B
4074EHG	F58C Terminal Board Kit	F58C
4074EQP	F90 Absorber Grommets (4)	F90
4074ETD	Line Cord and Strain Relief	
4074ETE	F58F Neon Light Assembly	F58F
4074ETG	F58F Interlock Switch Bracket	F58F
4074ETH	F58F Air Flow Switch	F58F

Building Solutions

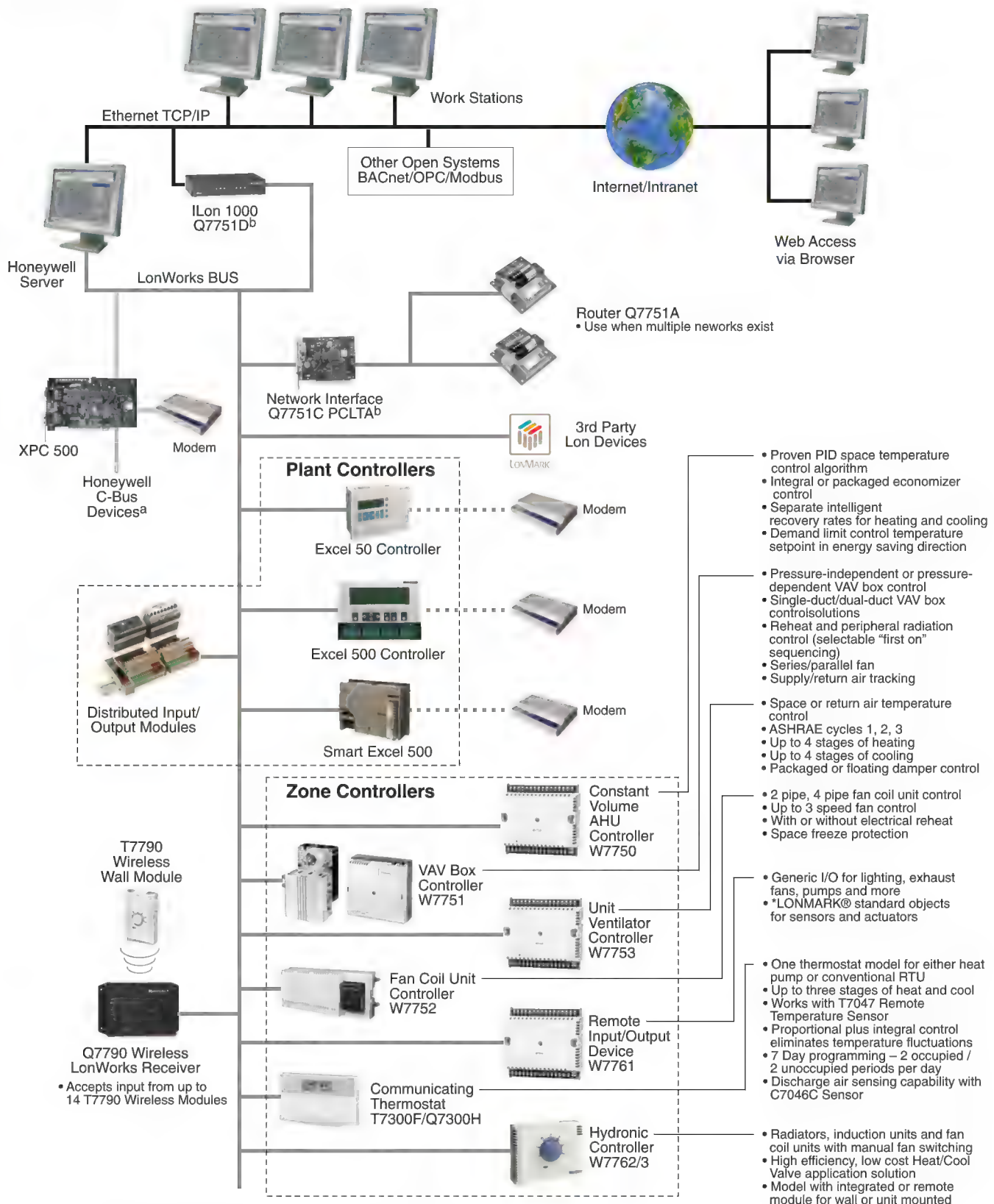
Large Building Solutions 342 - 351

Small to Medium Building Solutions 352 - 365

Legacy Building Solutions 366 - 372

Large Building Solutions

SymmetrE/ACSelon



^a Plant Controllers may be configured to communicate on the LonWorks® Bus for Open System jobs or the Honeywell C-Bus.

^b The system only requires the ILon 1000 or the PCLTA for each application, not both.

Excel 500



The Excel 500 and 600 Controllers are direct-digital control, microprocessor-based, programmable controllers that manage building functions.

Dimensions, Approximate: 5 5/8 in. high, 7 1/2 in. wide, 7 3/8 in. deep without extended terminal wiring base
(144mm high, 192mm wide, 188mm deep without extended terminal wiring base)

Application Size: Large (40+ I/O Points)

Building Management Interface: EBI, SymmetRE, XBS

Frequency: 50 Hz, 60 Hz

Accessories:

- 14507063-002** Power Supply Cable to connect power to Excel controller
- 14507063-003** Power Supply Cable (tinned ends) to connect power module to Excel controller
- 14507274-001** Extended Wiring Subbase without cover
- 14507274-002** Extended Wiring Subbase with cover and knockout plate
- 14507287-001** Power Module, 120 Vac Input, 50 VA Controller Transformer with Convertible Outlet and Breaker
- 14507287-002** Power Module, 120 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer with Convertible Outlet and Breaker
- 14507287-003** Power Module, 120 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer and 24 Vdc Accessory Transformer with Convertible Output and Breaker
- 14507287-004** Power Module, 220/240 Vac Input, 50 VA Controller Transformer, with Convertible Outlet and Breaker
- 14507287-005** Power Module, 220/240 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer with Convertible Outlet and Breaker
- 14507287-006** Power Module, 220/240 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer and 24 Vdc Accessory Transformer with Convertible Outlet and Breaker
- 14507287-007** 50 VA Power Module for Excel 5000 applications
- 14507289-001** Small size molded plastic door with lock for Excel 5000 system styled cabinet
- 14507289-002** Large size molded plastic door with lock for Excel 5000 system styled cabinet
- 14507305-001** Rough-In Ring (Small Cabinet)
- 14507305-002** Rough in Ring. (Large Cabinet)
- 14507330-001** 3 in. (76 mm) Bus Housing Connector (Horizontal Housing Arrangement)
- 14507330-002** 16 in. (38cm) Bus Housing Connector (Horizontal Housing Arrangement)
- 14507330-003** 42 in. (1m) Bus Housing Connector (Vertical-Stacked-Housing Arrangement)

An Excel 500 and 600 can include up to 18 plug-in modules including a computer module, power supply module, optional modem module, and a site-specific set of analog and digital input/output modules. The Excel 500 uses a standard computer module and the Excel 600 uses a high performance computer module. The flexibility of Excel 500 and 600 easily accommodate expansion. A network can link Excel 5000® system controllers (Excel 50, 100, 500, and 600), a Q7645A Excel Link, Q7750 Zone Manager, and a Communication System Server on a peer-to-peer Communication Bus (C-Bus) so they can exchange data.

The optional Excel X1581/2 Operator Terminal provides an operator interface that supports an interactive question-response dialog for easy access to messages and controller data. The optional Excel X1584 Portable Operator Terminal (POT) is a software tool that runs on a portable computer and is used to install applications programs, implement on-site adjustments, and access controller information. An Excel Building Supervisor Personal Computer (PC) workstation can provide a graphic operator interface for managing a network of controllers.

- Bus-Wide MMI provides local viewing/modification of point information of all controllers attached to the Communication Bus.
- Modular design to allow expansion.
- Optional Distributed I/O for flexibility and easy installation.
- Stand-alone or networked operation for flexible use.
- Plug-in modules to use what you need.
- CARE-generated application programs for programming ease.
- Optional user interface for easy on-site changes.
- Battery-backed RAM eliminates reprogramming after power outage.
- Point trending for timely information.

14507330-004 16 in. (38cm) Bus Housing Connector (Vertical-Stacked-Housing Arrangement)

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-002 LARGE SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-002 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-003 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel

209541B Terminator Module for FTT network (1 required for T-Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

XAL1 Swivel Label Mounts (Package Of 10) For Distributed I/O

XAL2 Cover Release Tools (Package Of 10) For Distributed I/O

XLF521B Distributed I/O: 8 Analog Inputs

XFL522A Distributed I/O: 6 Analog Output Module

XLF522B Distributed I/O: 8 Analog Outputs

XFL523 Distributed I/O: 12 Digital Inputs

XLF523B Distributed I/O: 12 Digital Inputs

XFL524A Distributed I/O: 6 Digital Output Module

XLF524B Distributed I/O: 6 Digital Outputs

XFR522A Manual Override Module For XFL522B

XFR524A Manual Override Module For XFL524B

XH562H Universal Input/Output Blank Housing Cover

XI581AH Excel 5000 Operator Interface

XI582AH Excel 5000 Operator Interface

XSL511 LonWorks Connector Module

XSL512 Manual terminal disconnect module

XSL513 Terminal Block For XFL521x, 522x, 523x

XSL514 Terminal Block For XFL524x

XW565 Cable—connects operator interface to controller, 15 ft (5m).

XW566 Cable—connects operator interface to controller, 50 ft (15m).

XW567 XI584 Cable for connection to "old" B-port

XW571 Modem Cable for connection to bask terminals of Excel 100C

XW582 Cable for Connection of RS232 (B-Port: XL50, XC5010C) to

XI582, 16 ft (5m)

XW583 Cable for connection of back of XC5010C to XI582, 16 ft (5m)

XW584 Adapter Cable Between XW582 To Be Used with Old B-Port

(XC5010B2, XL100B)

XW585 XI584-PC cable for connection to standard B-Port plug on the

front of the Excel 50, 100C, or XC5010C

14507354-003 LARGE SIZE SUBPANEL punched and screened for an accessory control panel

32002517-001 MERCHANDISE KIT

Large Building Solutions

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Comments
XC5010C	Large (40+ I/O Points)	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/Modulating, Staged On/Off, Floating	16 Bit CPU Module
XC6010	Large (40+ I/O Points)	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/Modulating, Staged On/Off, Floating	32 Bit CPU Module
XCL5010	Large (40+ I/O Points)	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/Modulating, Staged On/Off, Floating	16 Bit CPU Module

Excel 5000® Control Modules

Application Size: 8 Inputs

Building Management Interface: Excel 500/600 Controller

Product Number	Application Type	Connections	Network Communications	Compatible with:	Switching	Description	Comments	Includes
XF521A	8 Inputs	CARE	C-Bus	—	—	Analog Input Module	—	—
XF522A	8 Outputs	CARE	C-Bus	—	—	Analog Output Module	—	—
XF523A	12 inputs	CARE	C-Bus	—	OFF: $U_i = 2.5$ V, ON: $U_i = 5$ V	Digital Input Module	—	—
XF524A	Five isolated change-over contacts and 1 NO contact	CARE	C-Bus	—	—	Digital Output Module	—	—
XF525A	Three three-position relays	CARE	C-Bus	—	—	Three-Position Output Module	—	—
XF526	8 Inputs	CARE	C-Bus	—	—	Analog Input Module	—	—
XF527	8 Outputs	CARE	C-Bus	—	—	Analog Output Module	—	—
XF529	Five isolated change-over contacts and 1 NO contact	CARE	C-Bus	—	—	Digital Output Module	—	—
XM100A2	—	—	—	—	—	Excel Modem Device	—	—
XM500-US	—	LCBSCARE	C-Bus	LonStation XBS	—	TCP/IP MODEM.	The RS-232 and Ethernet cables should be fitted with non-conductive protective boots.	—
XP502	—	CARE	C-Bus	—	—	Power Supply Module	Can be connected to UPS device XAPU 24-2F	Watchdog function
XS50	—	—	—	—	—	Centra XS50 - XL50 Terminals	—	—
XS563	—	—	—	—	—	Socket for Wall Mounting	—	—
XS564	—	—	—	—	—	Socket for Panel Mounting	—	—

W7751 Variable Air Volume Handling Unit



The W7751B,D and F are VAV II Controllers in the Excel 10 family product line. These VAV controllers provide pressure independent or pressure dependent air flow control and series and parallel (induction) fan control using single and dual duct applications. VAV systems generally provide cool air only to the zones. The W7751 controllers provide additional outputs that control VAV box reheat coils. The heaters can be staged electric or modulating hot water. Supply and exhaust pressurization control are provided on a zone basis. W7751H Smart VAV Actuator is a factory-integrated VAV Box Controller and a 90 second ML6161B Direct-Coupled Actuator in the Excel 10 family product line.

Dimensions, Approximate: 3 1/4 in. high, 9 in. wide
(83 mm high, 229 mm wide)

Application Size: Small (<20 I/O Points)

Building Management Interface: Q7750A Excel 10 Zone Manager

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5% to 95% noncondensing.

Power Consumption: 10 VA

Power Supply: 20 Vac to 30 Vac at 25mA MIN to 400mA MAX current for any voltage

Setpoint Temperature Range: 45 to 99 F (7 to 37 C)

Operating Temperature Ratings: 32 F to 125 F (0 C to 51.66 C)

Shipping Temperature Ratings: 32 F to 125 F (0 C to 51.66 C)

Approvals:

Underwriters Laboratories Inc. File number E87741, Canadian Standards Association Listed: File number LR95329-3: FCC Meets FCC part 15 Class A requirements

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

- Uses Echelon® LonWorks™ protocol.
- W7751B,D,F use Free Topology Transceiver (FTT) networks and are compliant with VAV device object type number 8010 functional LonMark® profile.
- Energy saving setpoint reset for electrical demand limit control.
- Actuator included with W7751H mounts directly onto VAV box damper shaft and has up to 35 lb. in. torque, 90 degrees stroke, and 90 sec. Timing at 60 Hz.
- High speed 78 kilobit communications network.
- Capable of standalone operation, but uses E-Bus network communications.
- 120 controllers per Q7750A Excel 10 Zone Manager.
- Easy user-access to the network communications jack. Not available on W7751G1003.
- Uses enhanced microbridge-type airflow sensor with dual integral restrictor design.
- Easy user-access to airflow sensor inputs.
- Provides Proportional Integral Derivative (PID) temperature control.
- Designed for pressure independent Variable Air Volume (VAV) control.
- Floating hot water and three-stage electric or modulating hot water heat. (Up to two stages of reheat on W7751G.)
- Provides nonlinear floating algorithm for velocity control loops.
- Individual zone pressurization for supply and exhaust control.
- Factory configured via EEPROM with critical user parameters default values.
- Motion sensor interface for enhanced energy savings. (Not available on W7751G1003.)
- Supports Terminal Regulated Air Volume (TRAV) concept.
- Pressurize and depressurize, night purge, and morning warm-up sequences supported.
- Both plastic housing and controller module wiring subbase are UL 94-5V rated (W7751C,E,G).
- Wall module options for sensor, setpoint and bypass.
- Software selectable limits on remote setpoint adjustments.
- Three integrated 8 bit pipelined microprocessors running at 10 MHz. 14 bit A/D converter.
- 32K by 8 ROM/PROM, 512 bytes of EEPROM, and 2048 bytes of static RAM.

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-001 Rough-In Ring (Small Cabinet)

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 Large Size Subpanel, Punched and Screened for controller CPU

14507354-002 Large Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507354-003 Large Size Subpanel, punched and screened for an accessory control panel

14507358-002 Small Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507358-003 Small Size Subpanel punched and screened for Accessory Control Panel

209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 Merchandise Kit - Cable Assembly

Large Building Solutions

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Description	Comments
W7751B2002	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Mountable on Snaptrack
W7751B2010	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Has UUKL approval for use on fire systems, Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm)
W7751D2008	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm)
W7751D2016	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm), has UUKL approval for use on fire systems
W7751F2003	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm)
W7751F2011	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 VAV II Controller	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm), has UUKL approval for use on fire systems
W7751H2017	The maximum number of nodes per LONWORKS® Bus segment is 60.	E-Vision LonSpec RapidZone	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 Smart VAV Actuator	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm)
W7751H2025	Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	VAV Controller	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm), has UUKL approval for use on fire systems
W7751J2004	The maximum number of nodes per LONWORKS® Bus segment is 60.	E-Vision LonSpec RapidZone	LonWorks Bus	See Application Selection Guide (63-7045)	Pulse Width Modulation, Staged On/Off, Floating	Excel 10 Smart VAV Actuator	Mounted to standard 4 x 4 in. and 5 x 5 in. junction boxes or snapped to 35 by 7.5 mm EN50 022 DIN Rail. Subbase provides the slotted hole pattern for the R7450 series IRC devices (118x87 mm)

Excel 5000 Distributed I/O



Dimensions, Approximate: 5 in. wide, 3 in. length, 4.33 in. Height
(126 mm wide, 76 mm length, 110 mm height)

Building Management Interface: EBI, SymmetrE, XBS

Frequency: 50 Hz, 60 Hz

Operating Temperature Ratings: 32 to 122 F (0 to 50 C)

Shipping Temperature Ratings: 32 to 122 F (0 to 50 C)

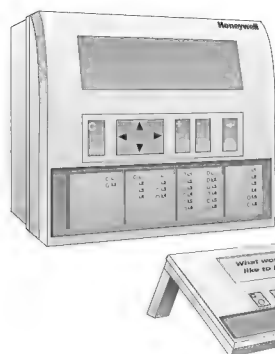
Approvals:

CE and EN 50081-1, LonMark Application Layer Guidelines Version 3.2

Product Number	Application Type	Connections	Network Communications	Compatible with:	Description
XFC3A06001	—	CARE	C-Bus	C-Bus controllers	Smart I/O module. Lonmark certified. Fixed terminals
XFC3D06001	—	CARE	C-Bus	C-Bus controllers	Smart I/O module with Removable terminals, Lonmark Certified
XFL521B	2 Heat / 2 Cool Small (<20 I/O Points)	CARE LonMark	C-Bus	C-Bus controllers	Distributed I/O - Analog input module
XFL522A	—	—	—	—	—
XFL522B	2 Heat / 2 Cool Small (<20 I/O Points)	CARE LonMark	C-Bus	C-Bus controllers	Distributed I/O - Analog output module
XFL523	—	—	—	—	—
XFL523B	2 Heat / 2 Cool Small (<20 I/O Points)	CARE LonMark	C-Bus	C-Bus controllers	Distributed I/O - Digital input module
XFL524A	—	—	—	—	—
XFL524B	2 Heat / 2 Cool Small (<20 I/O Points)	CARE LonMark	C-Bus	C-Bus controllers	Distributed I/O - Digital output module

Large Building Solutions

Excel XI581; XI582 Operator Terminals



Excel XI581 Operator
Terminal Controller
Mounted

Excel XI581 Operator
Terminal Desktop or
Wall Mounted

C8922

The XI581 Operator Terminal functions as a controller mounted interface for Excel 500 and 600 Controllers. The XI582 Operator Terminal functions as a desktop or panel/wall mounted interface for Excel 100, 500, and 600 Controllers and for the Excel Link, Zone Manager and the XM100 modem device.

- Each terminal provides a simple, menu-driven display with extensive functions to view and modify data, such as setpoint values, actual temperature values, control status, and switching status.
- Menu drive operation for user ease.
- Simple key functions to reduce customer training.
- Password protected operation, for multiple level users.
- Alarm handling capability to display critical alarms for on-site action.
- Backlit LCD display.
- 6 line by 32 character display.

Dimensions, Approximate: 5.67 in. high, 7.68 in. wide, 1.24 in. deep (192x144x31mm)

Building Management Interface: C-Bus

Humidity Ratings: 5% RH to 95% RH, non-condensing

Power Supply: 5V dc +10%, -10% (supplied by controller)

Operating Temperature Ratings: 32 to 158 F (0 to 50 C)

Shipping Temperature Ratings: 32 to 158 F (0 to 50 C)

Product Number	Compatible with:	Used With	Description	Comments
XI581AH	Excel 500, 600, 100 and 50 controllers	Excel Controller	Excel Operator Terminals (Controller Cover)	Mounts directly on the front cover of the Excel 500 and 600 Controller Unit
XI582AH	Excel 500, 600, 100 and 50 controllers	Excel Controller	Excel Operator Terminals (Desktop/Wall Mounted)	Desktop or Panel/Wall Mounted

XL50 Excel 50 Controllers



A compact, programmable controller that manages small building control applications. Available with or without operator interface. Provides perfect solution for managing small building control applications and HVAC equipment control applications.

- Direct communication to C-bus and/or modems
- DIN rail or panel door mounting
- Available with or without operator interface
- Stand-alone or networked operation
- CARE-generated application programs; ability to reuse available CARE applications
- Flash-EPROM for efficient downloads
- Wiring simplicity: accessible and removable screw terminal blocks
- Capacitor-backed RAM; no battery required

Dimensions, Approximate: 5.90 in. high, 7.79 in. wide, 3.19 in. deep (150 mm wide, 198 mm wide, 81 mm deep)

Application Size: 22 I/O Points

Building Management Interface: EBI, SymmetrE, XBS

Frequency: 50 Hz, 60 Hz

Power Consumption: 72 VA, if fully equipped

Power Supply: 24Vac +/- 20%

Operating Temperature Ratings: 32 F to 122 F (0 to 50 C)

Shipping Temperature Ratings: 32 F to 122 F (0 to 50 C)

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Description	Comments
XL50ACC2	22 I/O Points	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation, Analog/Modulating, Staged On/Off Floating	Freely Programmable	—
XL50ACC3	22 I/O Points	CARE	C-Bus	C-Bus controllers	Staged On/Off, Floating, Pulse Width Modulation, Analog/Modulating	Freely Programmable	—

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Description	Comments
XD505A	—	—	—	—	—	C-Bus Interface Submodule Retrofit Kit	The programmed EPROM contains software that operates the XD505/A XBS C-Bus Interface Submodule
XD508	—	—	—	—	—	C-Bus Interface Submodule Retrofit Kit	The programmed EPROM contains software that operates the XD508 C-Bus Interface Submodule. This firmware is used for operation of the M-Bit C-Bus Submodule. The M-bit C-Bus Submodule is required for C-Bus hardware device communication.
XD50-FCL	—	—	—	—	—	Excel 50 Communication card for both C and Lon Bus	—
XD50-FC	—	—	—	—	—	Excel 50 Communication card for C-Bus only	—
XD50-FL	—	—	—	—	—	Excel 50 Communication card for Lon Bus only	—
XDM506	—	—	—	—	—	XL600, 500, 100, 80 MODEM SUBMODULE - PROVIDES DIAL-IN/ DIAL-OUT FOR SINGLE CONTROLLERS	—
XL50UMMIPC	22 I/O Points	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/ Modulating Staged On/Off Floating	Freely Programmable	Includes a LCD keypad
XL50UMMIPC-LON	22 I/O Points	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/ Modulating Staged On/Off Floating	XL50 HVAC CONTROLLER with MMI AND LON COMMUNICATION	Includes a LCD keypad
XL50UPC	22 I/O Points	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/ Modulating Staged On/Off Floating	Freely Programmable	Does not include a LCD keypad
XL50UPC-LON	22 I/O Points	CARE	C-Bus	C-Bus controllers	Pulse Width Modulation Analog/ Modulating Staged On/Off Floating	XL50 HVAC CONTROLLER with LON COMMUNICATION	Does not include a LCD keypad

Large Building Solutions

Excel 100 Controllers



The Excel 100 Controllers are direct-digital control, microprocessor-based, programmable controllers that manage building functions.

- Stand-alone or networked operation for flexible use or expansion.
- CARE generated application programs for comprehensive control strategies.
- Analog or digital inputs and outputs for flexible point use.
- Multiple operator interface options for local or easy on-site changes.
- Point trending for timely information.
- Alarm handling facility to locally display the problem and remote dialout to act on it.
- Battery-backed RAM data to keep controller programming in place during power outage.
- Bus-Wide MMI provides local viewing/modification of point information of all controllers attached to the Communication Bus.

Building Management Interface: C-Bus

Accessories:

- 14507063-003** Power Supply Cable (Tinned Ends) To Connect Power Module To Excel Controller
- 14507222-001** Relay Module, Four Relays. Includes Hand-Off-Auto Switches and LEDs
- 14507222-002** Relay Module, Four Relays. Includes LEDs
- 14507287-001** Power Module, 120 Vac Input, 50 VA Controller Transformer with Convertible Outlet and Breaker
- 14507287-002** Power Module, 120 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer with Convertible Outlet and Breaker
- 14507287-003** Power Module, 120 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer and 24 Vdc Accessory Transformer with Convertible Output and Breaker
- 14507287-004** Power Module, 220/240 Vac Input, 50 VA Controller Transformer, with Convertible Outlet and Breaker
- 14507287-005** Power Module, 220/240 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer with Convertible Outlet and Breaker
- 14507287-006** Power Module, 220/240 Vac Input, 50 VA Controller Transformer plus 100 VA Accessory Transformer and 24 Vdc Accessory Transformer with Convertible Outlet and Breaker
- 14507287-007** 50 VA Excel 5000 access power module for Excel 5000 applications
- MCD3** Relay Module, One 3-Position Output, One Spdt Output
- MCE3** Relay Module, Two Spdt Outputs, One Spst Output

XW567 XI584 cable for connection to "old" B-port

XW571 Modem Cable for connection to bask terminals of Excel 100C

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-002 LARGE SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507354-003 LARGE SIZE SUBPANEL punched and screened for an accessory control panel

14507358-002 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-003 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel

32002517-001 MERCHANDISE KIT

XI582AH Excel 5000 Operator Interface

XW582 Cable For Connection Of Rs232 (B-Port: XI50, Xc5010c) To Xi582, 16 Ft. (5m)

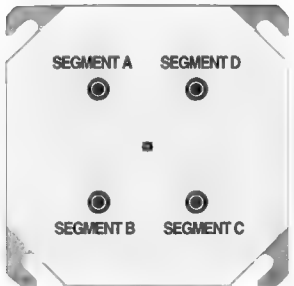

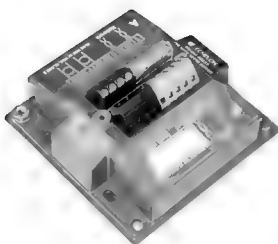
XW583 Cable For Connection Of Back Of Xc5010c To Xi582, 16 Ft. (5m)

XW584 Adapter Cable Between Xw582 To Be Used with Old B-Port (Xc5010b2, XI100b)

XW585 XI584-PC cable for connection to standard B-Port plug on the front of the Excel 50, 100C, or XC5010C

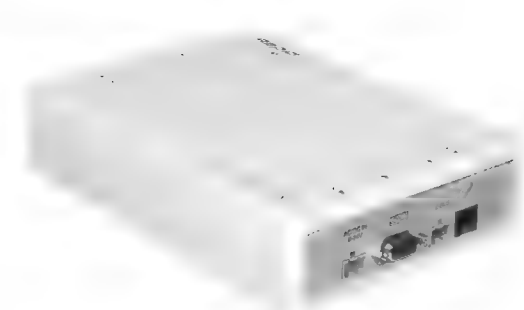
Product Number	Application Type	Connections	Network Communications	Output Type	Description	Comments
XL100B2	—	CARE	CARE	—	Freely Programmable	C-Bus controllers
XL100CU	36 I/O Points	CARE	CARE	0-10 Vdc, 20mA	Freely Programmable	C-Bus controllers
XL100CUUKL	36 I/O Points	CARE	CARE	0-10 Vdc, 20mA	Freely Programmable, for Smoke & Fire (Europe)	C-Bus controllers

LonWorks Bus Accessories

OS Number	Description	Used With	
32002516-001	Cable to connect Serial LonTalk adapter to Audio-type bus connection on LonMark Controller	LonMark Controllers	
32004756-003	W7760A FIRMWARE UPGRADE KIT	205979 SLTA Connector, W7760	
EXCELon	EXCELon LonWork Network Management Tool	W7760, Excel 5000	
Q7740A1008	Two way repeater with connections for two network segments	Excel 5000	
Q7740B1006	Four way repeater with connections for four network segments		
Q7750A1005	Excel 10 Zone Manager, used for W7751A,C,E,G only		
Q7750A2003	Excel 10 Zone Manager		
Q7751A2010	Echelon TP/FT-10 to TP/FT-10 router for use in LonWorks networks.		
Q7751A2028	Echelon TP/FT-10 to TP/XF-1250 router for use in LonWorks networks		
Q7751D2006	Echelon i.LON 1000 router XF-1250 for use in LonWorks networks		
Q7751D2014	Echelon i.LON 1000 router TP/FT-10 network adapter for use in LonWorks networks		
Q7751E1005	Echelon i.LON 10 FT-10 network adapter with power supply for use in LonWorks networks		
Q7751F1003	Echelon i.LON 100 TP/FT-100 network adapter for use in LonWorks networks		
Q7752B2009	Echelon PCC-10 (PCMCIA) Serial LonTalk Adapter, FTT-10A, for use in LonWorks network		
Q7760A2001	Echelon Serial LonTalk Adapter (SLTA-10) for use in LonWorks network		

Small to Medium Building Solutions

Q7770 RapidLink



The Excel 10 Q7770A1001 RapidLink device is a complete network interface unit for a FTT LonWorks® Bus network. RapidLink is equipped with an on-board modem that eliminates the requirement for an on-site modem for remote connections. The Q7770A1001 uses 9 to 24 Vac or Vdc, 9 Vdc power supply using removable screw terminals or a 9 Vdc barrel connector to perform network operations. A connector cable attaches the Q7770A to the LonWorks-Bus port on Excel 10 controllers or wall modules.

- High performance communications protocol provides for faster communication of data to your LonWorks network.
- Fixed 115,200 bits per second (bps) serial bit rate with autobaud detection.
- Uses LonTalk® LonWorks® network protocol.
- 9 to 24 Vac or Vdc power input using removable screw terminals or a 9 Vdc barrel connector.
- Color-coded, removable screw terminals for network and power wiring.

Application Size: Small to Large

Accessories:

50000591-001 RapidLink Accessory Kit (U.S.)

Product Number	Application Type	Network Communications	Comments
Q7770A1001	Small to Large	LonWorks Bus	Transceiver Type: Transformer isolated, differential Manchester transceiver Display Two service LEDs indicate service request information for each segment; Status LED indicates when network traffic is occurring;

RapidLink Accessory Kit

This is an accessory kit which may be purchased separate from the Q7790A RapidLink device (RapidLink does NOT come with an accessory kit). The following items come with this accessory kit:

- 12VAC Power Supply with connector
- 2 Cables - Telco Line RJ11 and serial DB-9 M-F
- LonWorks Bus Connector

OS Number	Description
50000591-001	RapidLink Accessory Kit (U.S.)

S7760 Excel 15 Command Display



Dimensions, Approximate: 7 3/4 in. wide, 4 3/4 in. high, 1 9/16 deep
Subbase 3 3/8 in. wide, 3 3/8 in. deep (187 mm wide, 121 mm high, 40 mm deep) (Subbase 86 mm wide, 86 mm high)

Application Size: Small (<20 I/O Points)

Building Management Interface: LonStation

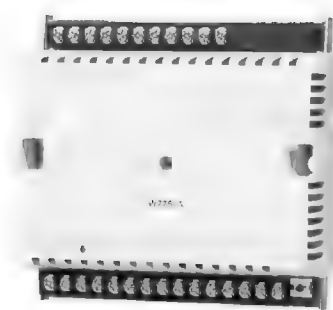
Operating Temperature Ratings: 32 to 120 F (0 to 45 C)

Shipping Temperature Ratings: 32 to 120 F (0 to 45 C)

Approvals: CE, FCC Part 15 Subpart J, Class A

Product Number	Application Type	Connections	Network Communications	Compatible with:	Description	Comments
S7760A2007	Small (<20 I/O Points)	LonSpec RapidZone	LonWorks Bus	LonWorks bus	Command/Display	Display: LEDs Service LED provides status information Service request button provided for broadcasting neuron ID on LonWorks-Bus Transceiver Type: uses an FTT
S7760A2031	—	—	LonWorks Bus	Excel 10 Controllers, Excel 15 Controllers, Command Display	Excel 15 Command Display	Underwriters Laboratories UL and cUL listed UL916 as a Class 2 device; FCC Listed Part 15 Subpart J. Class A EC Conforms to European Standards CE mark; EN50081-1; EN50082-1; FCC: Meets Fcc part 15 class B requirements.

W7750 Constant Volume Air Handling Unit



The W7750A, B, C are LonMark® compliant Constant Volume Air Handling Unit Controllers used to control single zone and heat pump air handlers.

- High side triac switching (B and C only).
- Freezestat protection for HVAC equipment (B and C only).
- Analog outputs (C only).
- Factory configured via EEPROM with critical user parameter default values.
- Uses LonTalk® network (E-Bus) communications protocol.
- High-speed 78 kilobit communications network.
- Conforms with Echelon® LonMark® HVAC Interoperability standard for Roof Top Unit controllers (profile number 8030).
- Free Topology Transceiver (FTT) network technology is insensitive to polarity, simplifying installation.
- Capable of stand-alone operation and has enhanced features available when using the E-Bus network communications.
- 120 controllers per Q7750A Excel 10 Zone Manager.
- Designed for both staged heating/cooling control and modulating heating/cooling control.
- Uses either Series 60 Floating Control or PWM (W7750B only) providing modulating control for heating/cooling equipment.
- Supports two types of economizer control: modulating control and enable/disable control.
- Provides Proportional Integral Derivative (PID) temperature control.
- Uses an adaptive algorithm (patent pending) that continuously adjusts the discharge air setpoint as needed (W7750B only).

- Motion sensor interface for enhanced energy savings.
- Window sensor input for additional energy savings.

Dimensions, Approximate: 3-1/4 x 9.0 in. (83 x 229 mm)

Application Size: Small (<20 I/O Points), 3 Heat / 3 Cool

Building Management Interface: Excel Building Supervisor (XBS), LonStation

Ambient Temperature Range: 1.5 A @ 24Vac, 7.5 A inrush @ 24 Vac

Frequency: 50 Hz, 60 Hz

Power Consumption: 6 VA

Power Supply: 24Vac

Setpoint Temperature Range: 45 to 99 F (7 to 37 C)

Operating Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

Shipping Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

Approvals:

Underwriters Laboratories Inc. UL 916 (E7741) and cUL (E87741). FCC Meets FCC part 15 Class B requirements EC Conforms to EN50081-1 (CISPR 22 Class B) and EN50082-1, CE Mark

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 Large Size Subpanel, Punched and Screened for controller CPU

14507354-002 Large Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507354-003 Large Size Subpanel, punched and screened for an accessory control panel

14507358-002 Small Size Subpanel, punched and screened for Accessory Control Panel No. 1

205979 Cable Assembly W7751 MDS

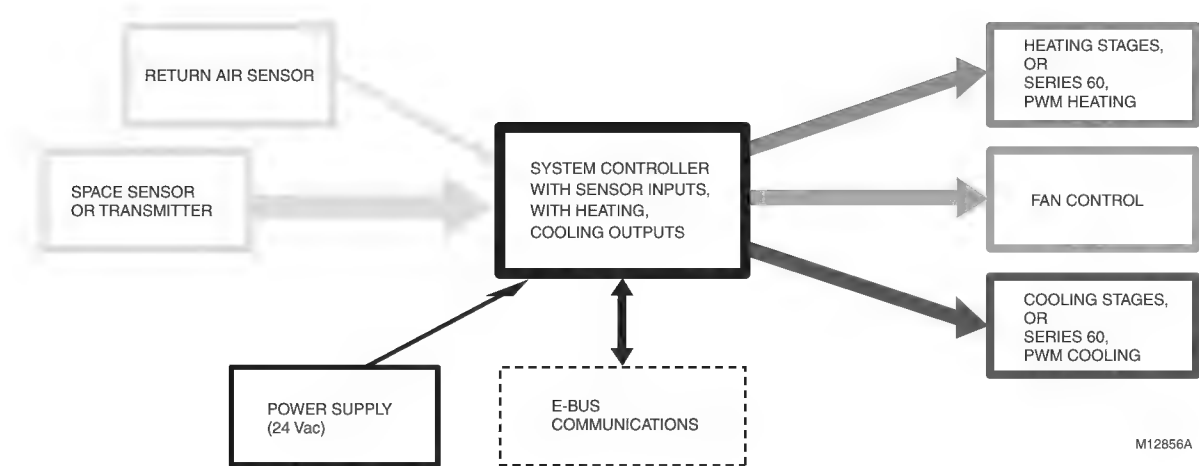
209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 Merchandise Kit - Cable Assembly

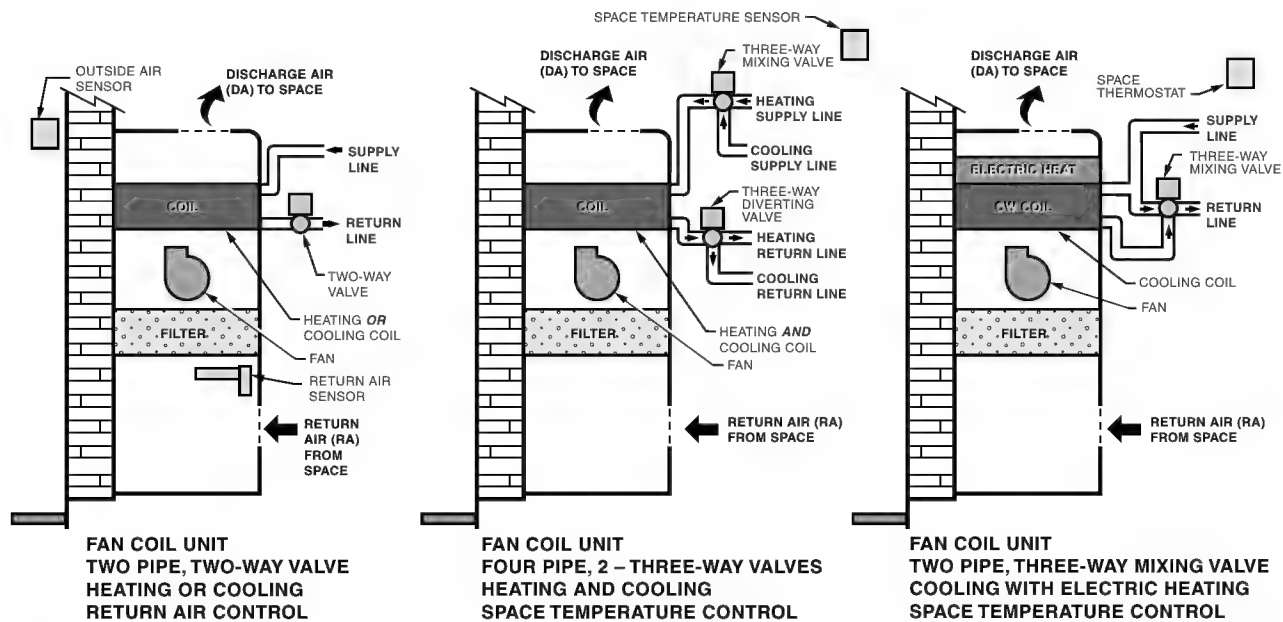
Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Description	Comments
W7750A2005	3 Heat / 3 Cool Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7046)	Pulse Width Modulation Staged On/Off Floating	Constant Volume AHU Controller	6 Digital Outputs (relays)
W7750B2011	3 Heat / 3 Cool Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7046)	Pulse Width Modulation Staged On/Off Floating	Constant Volume AHU Controller	8 Digital Outputs (triacs)
W7750C2001	3 Heat / 3 Cool Small (<20 I/O Points)	E-Vision	LonWorks Bus	See Application Selection Guide (63-7046)	Pulse Width Modulation Analog/ Modulating Staged On/Off Floating	Constant Volume AHU Controller	5 Digital Outputs (triacs) and 3 Analog outputs

Excel 10 W7752A Fan Coil Controller

Functional Block Diagram



Duct Diagram

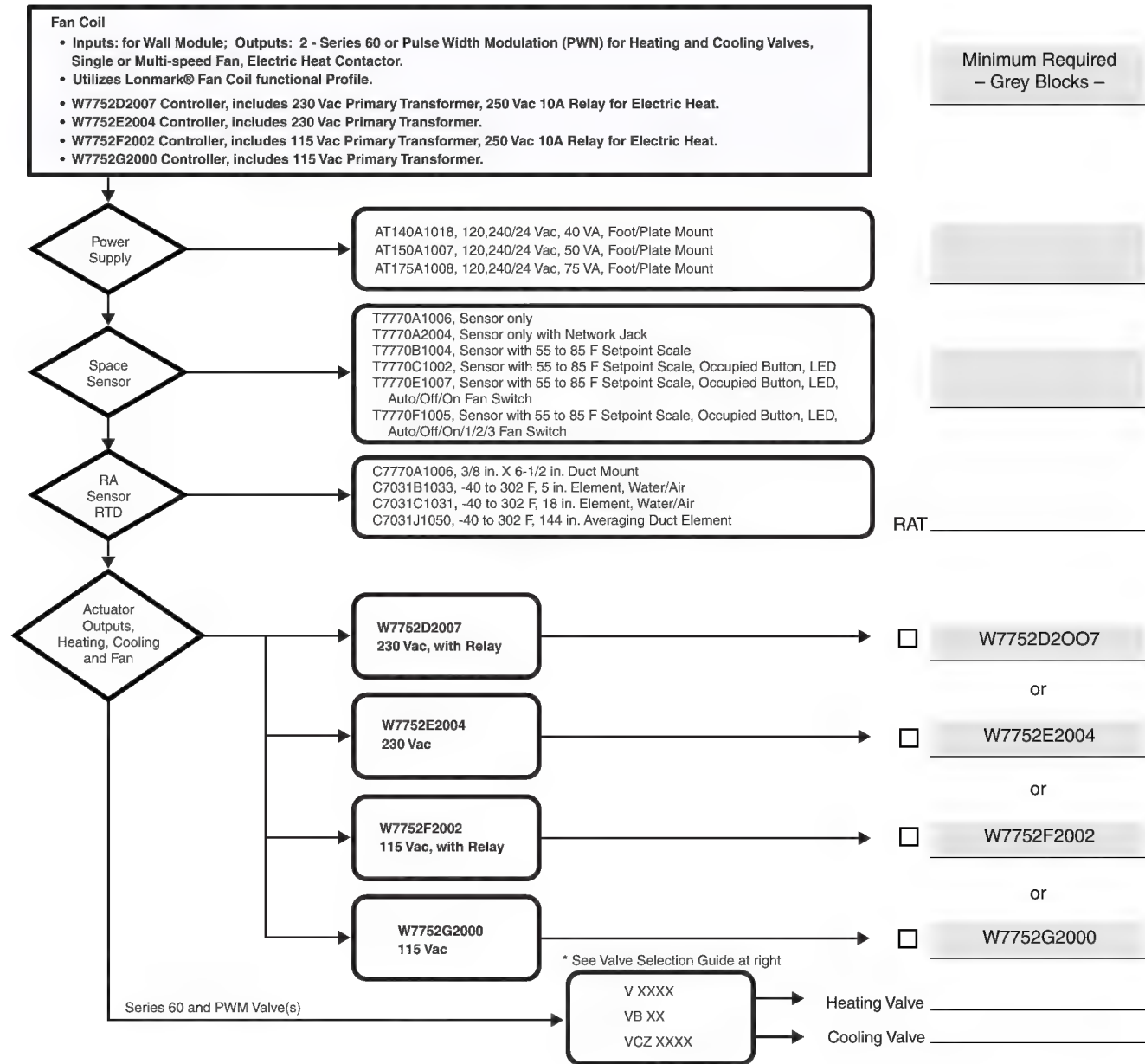


M12854A

KEY

INPUTS
ACTUATORS/VALVES
VENTILATION/FAN
HEATING
COOLING

Excel 10 Fan Coil Application/Selection Decision Matrix



Accessories

R8222B1067 Relay, 24 Vac Coil, spdt, 16A/120 Vac, 25A/208,277 Vac

_____ Quantity _____

R8222D1014 Relay, 24 Vac Coil, dpdt, 16A/120 Vac, 25A/208,277 Vac

_____ Quantity _____

AK3791 Wire, E-BUS, Single Twisted Pair, Plenum Rated, in feet

_____ feet _____

Job Identification: _____

Small to Medium Building Solutions

Honeywell Fan Coil Valve Selection

BALL VALVE SELECTION, Series 60 Floating, Non-Spring Return 24 Vac, -30 to 150°F Ambient Temperature

Valve Assembly	Size (in.)	Cv	Ball Valve	Actuator	Spring Return	Close-off (psi)	Notes
VB34A1072	1/2 FP	15	VB30A1039	ML6161B2024	No	150	2-way FP = Full Port
VB34B1014	1/2 RP	5.4	VB30B1004	ML6161B2024	No	150	3-way RP = Reduced Port

LINEAR GLOBE IRC VALVE SELECTION, Series 60 Floating, Non-Spring Return 24 Vac, -30 to 140°F Ambient Temperature

Valve Assembly	Sweat Size (in.)	Cv	Close-off (psi)	Actuator	Notes
V5852A2007	1/2	0.19	65	M6410A1029	V5852: Two-way Valve Body M6410A1029 is Plenum Rated. M6410A1029 includes a conduit connector.
V5852A2015	1/2	0.29	65		
V5852A2023	1/2	0.47	65		
V5852A2031	1/2	0.74	65		
V5852A2049	1/2	1.2	65		
V5852A2056	1/2	1.9	45		
V5852A2064	3/4	2.9	45		
V5852A2072	3/4	4.9	45		
V5853A2006	1/2	0.29	55	M6410A1029	V5853A: Three-way Mixing Valve Body M6410A1029 is Plenum Rated. M6410A1029 includes a conduit connector.
V5853A2014	1/2	0.47	55		
V5853A2022	1/2	0.74	55		
V5853A2030	1/2	1.2	22		
V5853A2048	1/2	1.9	22		
V5853A2055	3/4	2.9	7.25		
V5853A2063	3/4	4.9	7.25		

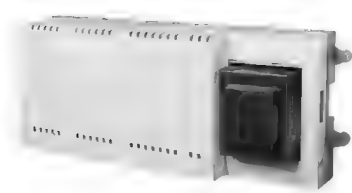
VALVE SELECTION, Two Position, Spring Return 24 Vac, MAX 125°F Ambient Temperature

Valve Assembly	Sweat Size (in.)	Cv	Close-off (psi)	Pattern	Notes
V8043E1004	1/2	3.5	20	Two-way	Manual Opener
V8043E1012	3/4	3.5	20		18 in. Leadwires
V8043E1020	1	3.5	20		Replaceable Powerhead without opening system.
V8044A1010	1/2	4	20	Three-way Diverting	Manual Opener
V8044A1044	3/4	7	10		18 in. Leadwires Replaceable Powerhead without opening system.

VC SERIES BALANCED VALVE SELECTION, Series 60 Floating, Non-Spring Return 24 Vac, -32 to 150°F Ambient Temperature

Valve Assembly	Sweat Size (in.)	Cv	Close-off (psi)	Pattern	Actuator
VCZAA1100	1/2	3.2	60	Two-way	VC6831ZZ11, 24 Vac, 1m cable, Floating, 120 sec Timing
VCZAM1100	3/4	4.6	60		
VCZAS1100	1	6.6	60		
VCZMA6100	1/2	3.8	60	Three-way	VC6831ZZ11, 24 Vac, 1m cable, Floating, 120 sec Timing
VCZML6100	3/4	5.9	60		
VCZMS6100	1	6.6	60		

W7752 Fan Coil Unit Controllers



The W7752 Fan Coil Unit Controllers provide room temperature control for two and four pipe fan coil units with optional electric heating coils and can control single, two or three speed fans. Timing and inter-lock features make the W7752 suitable for systems using electric heat and compressors.

Dimensions, Approximate: 4 1/8 in. high, 10 1/8 wide, 2 1/2 in. deep (101 mm high, 257 mm wide, 60 mm deep)

Application Size: Small (<20 I/O Points), 3 Heat / 3 Cool

Building Management Interface: EBI, SymmetrE, XBS

Ambient Temperature Range: —

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5% to 95% noncondensing

Power Consumption: 30 VA max.

Power Supply: 115 Vac + 10%, -15%

Setpoint Temperature Range: 32 to 104 F (0 to 40 C)

Operating Temperature Ratings: 32 F to 122 F (0 C to 50 C)

Shipping Temperature Ratings: 32 F to 122 F (0 C to 50 C)

Approvals:

CE mark; EN50081-1; EN50082-1; FCC: Meets Fcc part 15 class B requirements.

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

- LonMark® Fan Coil Unit HVAC profile #8020.
- Stand-alone operation or on high-speed 78 kilobit Echelon® Bus (E-Bus) network
- Direct connection of thermal actuators, fan switch, electric heat.
- Factory-configured default parameters.
- Wide range of supported valves and actuators.
- Interlocks and time delays to protect equipment.
- Slim design fits into narrow fan coil units.
- Terminations all on one side allow controller to be positioned at back of fan coil unit.
- Integral 115 Vac or 230 Vac transformer.

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-001 Rough-In Ring (Small Cabinet)

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 Large Size Subpanel, Punched and Screened for controller CPU

14507354-002 Large Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507354-003 Large Size Subpanel, punched and screened for an accessory control panel

14507358-002 Small Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507358-003 Small Size Subpanel punched and screened for Accessory Control Panel

205979 Cable Assembly W7751 MDS

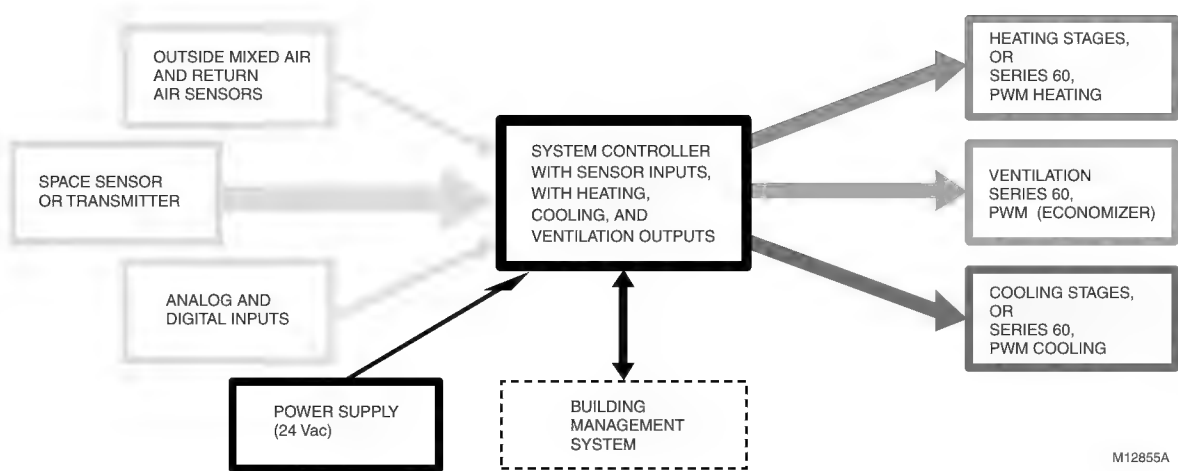
209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 Merchandise Kit - Cable Assembly

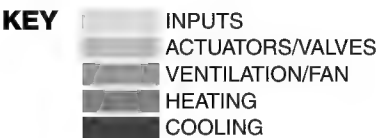
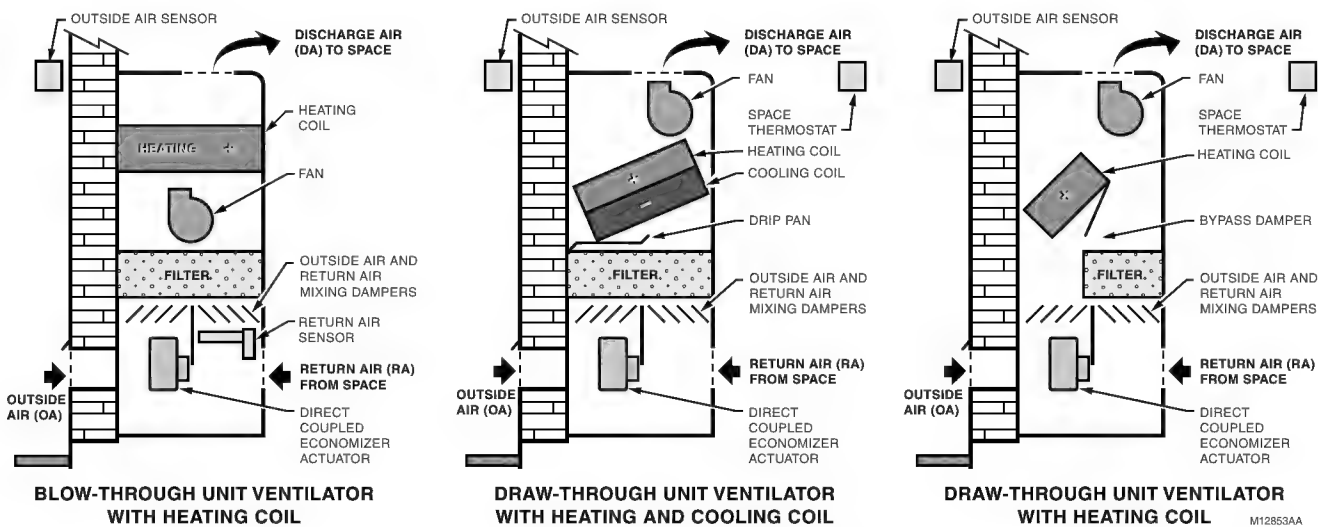
Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Description	Comments	Includes
W7752F2002	3 Heat / 3 Cool Small (<20 I/O Points)	E-Vision CARE	LonWorks Bus	See Application Selection Guide (63-7043)	Pulse Width Modulation Staged On/Off Floating	Fan Coil Unit Controllers	115 Vac power with electric heat relay	250 VAc 10A electric reheat relay and 3 fan speed relays
W7752G2000	3 Heat / 3 Cool Small (<20 I/O Points)	E-Vision CARE	LonWorks Bus	See Application Selection Guide (63-7043)	Pulse Width Modulation Staged On/Off Floating	Fan Coil Unit Controllers	115 Vac power without electric heat relay	3 fan speed relays

Excel 10 W7753A Unit Ventilator

Functional Block Diagram



Duct Diagram



Excel 10 Fan Coil Application/Selection Decision Matrix

Unit Ventilator		Minimum Required – Grey Blocks –
<ul style="list-style-type: none"> Inputs: 2 - Resistive for Wall Module, 2 - Resistive, 2 - 1 to 10 Vdc or 4 to 20 mA, 4 - dry contact Digital. Outputs: 1 - 22 Vdc for Sensor Power, 8 Triac Digital (24 Vac, 50 mA) for Series 60 or PWM Heating, Cooling and Ventilation. ASHRAE Cycles I, II, and III, and LonMark® Unit Ventilator Functional Profile. 		
Power Supply	AT140A1018, 120, 240/24 Vac, 40 VA, Foot/Plate Mount AT150A1007, 120, 240/24 Vac, 50 VA, Foot/Plate Mount AT175A1008, 120, 240/24 Vac, 75 VA, Foot/Plate Mount	
Space Sensor	T7770A1006, Sensor only T7770A2004, Sensor only with network jack T7770B1004, Sensor with 55 to 85 F Setpoint Scale T7770C1002, Sensor with 55 to 85 F Setpoint Scale, Occupied Button, LED T7770E1007, Sensor with 55 to 85 F Setpoint Scale, Occupied Button, LED, Auto/off/on Fan Switch T7770F1005, Sensor with 55 to 85 F Setpoint Scale, Occupied Button, LED, Auto/Off/On/1/2/3 Fan Switch	
OA Sensor RTD	C7031F1018, -40 to 302 F, Outside Sensor C7170A1002, -40 to 257 F, 24 in. lead	OAT _____
RA/MA Sensor RTD	C7770A1006, 3/8 in. X 6-1/2 in. C7031B1033, -40 to 302 F, 5 in. Element, Water/Air C7031C1031, -40 to 302 F, 18 in. Element, Water/Air C7031D1062, -40 to 302 F, 5 in. Element, with 123872A 1/2 in. NPT well C7031F1018, -40 to 302 F, OA Enclosure C7031J1050, -40 to 302 F, 144 in. Averaging Duct Element C7031K1017, -40 to 302 F, Strap-on Element, Water	RAT _____
DA Sensor RTD		MAT _____
Actuator Outputs, Economizer, Heat, Cool	W7753A2002 Series 60 and PWM Actuators MLXXXX* MLXXXX* ML_VBXXXX* ML_VBXXXX*	DAT _____ F & ByPs _____ Econ _____ Ht _____ CL _____
Additional Inputs for W7753A2002		
Outside Air Humidity Sensors	C7600B1000, 2 to 10 Vdc, Wall Mount C7600B1018, 2 to 10 Vdc, J-Box Mount C7600B1008, 4 to 20 mA, Duct Mount	OA Humidity _____
Return Air Humidity Sensors		RA Humidity _____
Outside Air Enthalpy Sensor	C7400A1004, 4 to 20 mA, Duct Mount	OA Humidity _____
Return Air Enthalpy Sensor		RA Humidity _____
Air Filter Differential Pressure	Third Party, 2 to 10 Vdc, 0 to 5 in. WC	_____
CO ₂ , 0-2000 PPM, IAQ Sensors	Third Party, 0 to 10 Vdc	_____
Monitoring Sensors	2 TO 10 Vdc (Monitored and Displayed) Third Party	_____

Accessories

R8222B1067 Relay, 24 Vac Coil, spdt, 16A/120 Vac, 25A/208,277 Vac

_____ Quantity _____

R8222D1014 Relay, 24 Vac Coil, dpdt, 16A/120 Vac, 25A/208,277 Vac

_____ Quantity _____

AK3791 Wire, E-BUS, Single Twisted Pair, Plenum Rated, in feet

_____ feet _____

Job Identification: _____

Small to Medium Building Solutions

Honeywell Unit Ventilator Actuator / Valve Selection

DAMPER ACTUATOR SELECTION, Series 60 Floating, Non-Spring & Spring Return- Direct Coupled

24 Vac, -30 to 150°F Ambient Temperature, 90 degree, 90 seconds, w/De-clutch

Actuator	Torque (lb-in.)	Spring Return	Notes	Accessories
ML6161B2024	35	No		ML6161B
ML6174B2019	70			#4074ENJ 45 & 60 Stop Pin & 3/8 Shaft Adapter
ML6174C2000			w/Feedback potentiometer	#7640QW Metal Enclosure for Conduit Connection & Plenum Rating
ML6184A1003 ^a	150			#200976A 500 ohm Feedback Pot., #200976C 1000 ohm Feedback Pot.
ML6184C1001 ^a			w/Two Auxillary Switches	#201052A 1-SPDT Auxillary Switch, #201052B 2-SPDT Auxillary Swtch
ML6175A1001 ^a	25	Yes		ML6174,75,84,85,94,95
ML6175F1006 ^a			w/Two Auxillary Switches	#205753 3/8 in. Hub Sleeve, #205758 5/8 in. Hub Sleeve
ML6185A1000 ^a	50			#205820A 3-Point Mounting Kit
ML6185F1005 ^a			w/Two Auxillary Switches	#205830A Crank Arm Assembly
ML6195A1009	144			#205840A Tandem Mount Kit
				#205850A End Stop Kit

^aStandard XL10 switches 24V com. Reverse 24V+ and 24V com to prevent motor damage.

BALL VALVE SELECTION, Series 60 Floating, Non-Spring & Spring Return

24 Vac, -30 to 150°F Ambient Temperature

Valve Assembly	Sweat Size (in.)	Cv	Ball Valve	Actuator	Spring Return	Close-off (psi)	Notes
VB34A1072	1/2 FP	15	VB30A1039	ML6161B2024	No	150	2-way FP = Full Port; RP = Reduced Port NPT Pipe Thread
VB34A1304	3/4 RP	30	VB30A1047	ML6174A2019	No	150	
VB34A1312	3/4 FP	51	VB30A1054		No	150	
VB34A1536	1 FP	56	VB30A1070	ML6184A1003 ^a	No	150	
VB34A1544	1-1/4 RP	48	VB30A1088		No	150	
VB34A2088	1-1/4 FP	125	VB30A1096	ML6194A1002 ^a	No	150	
VB34A2104	1-1/2 FP	177	VB30A1112		No	150	
VB34B1014	1/2 RP	5.4	VB30B1004	ML6161B2024	No	150	3-way FP = Full Port; RP = Reduced Port NPT Pipe Thread
VB34B1089	3/4 RP	12	VB30B1012	ML6174A2019	No	150	
VB34B1162	1 RP	14	VB30B1020	ML6184A1003 ^a	No	150	
VB35B1170	1-1/4 RP	21	VB30B1036		No	150	
VB35B1477	1 1/4 RP	21	VB30B1095	ML6194A1002 ^a	No	150	
VB35B1485	1-1/2 RP	34	VB30B1103		No	150	
VB35B1493	2 RP	47	VB30B1053		No	150	
VB35A1020	1/2 RP	4	VB30A1187	ML6185A1000 ^a	Yes	150	2-way FP = Full Port; RP = Reduced Port NPT Pipe Thread
VB35A1038	1/2 FP	15	VB30A1195		Yes	150	
VB35A1046	3/4 RP	30	VB30A1203		Yes	150	
VB35A1723	3/4 FP	51	VB30A1211	ML6195A1009	Yes	150	
VB35A1731	1 RP	43	VB30A1062		Yes	150	
VB35A1749	1-1/4 RP	48	VB30A1088		Yes	150	
VB35B1003	1/2 RP	5.4	VB30B1061	ML6185A1000 ^a	Yes	150	3-way FP = Full Port; RP = Reduced Port NPT Pipe Thread
VB35B1102	3/4 RP	12	VB30B1079		Yes	150	
VB35B1326	1 RP	14	VB30B1020	ML6195A1009	Yes	150	
VB35B1334	1-1/4 RP	21	VB30B1038		Yes	150	

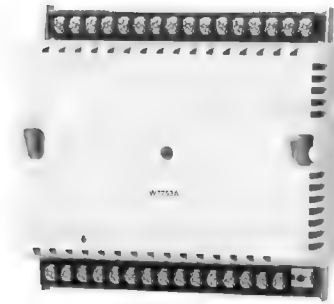
^aStandard XL10 switches 24V com. Reverse 24V+ and 24V com to prevent motor damage.

VC Series Balanced Valve Selection, Series 60 Floating, Non-Spring Return

24 Vac, -32 to 150°F Ambient Temperature

Valve Assembly	Sweat Size (in.)	Cv	Close-off (psi)	Pattern	Actuator
VCZAA1100	1/2	3.2	60	Two-way	VC6831ZZ11, 24 Vac, 1m cable, Floating, 120 sec Timing
VCZAM1100	3/4	4.6	60		
VCZAS1100	1	6.6	60		
VCZMA6100	1/2	3.8	60	Three-way	VC6831ZZ11, 24 Vac, 1m cable, Floating, 120 sec Timing
VCZML6100	3/4	5.9	60		
VCZMS6100	1	6.6	60		

W7753 Unit Vent Controllers



A direct digital control for unit ventilators with staged, floating, or pulse width modulation using pre programmed heating, cooling, economizer, and ASHRAE cycles I, II, or III algorithms.

Dimensions, Approximate: 5 5/8 in. high, 6 in. wide, 2 1/8 in. deep (143 mm high, 152 mm wide, 54 mm deep)

Application Size: Small (<20 I/O Points), 2 Heat / 2 Cool

Building Management Interface: Excel Building Supervisor (XBS), LonStation

Frequency: 50 Hz, 60 Hz

Power Consumption: 6 VA

Setpoint Temperature Range: 55 to 85 F (13 to 29 C)

Approvals:

UL 916, FCC part 15 Class B requirements, CE

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-001 Rough-In Ring (Small Cabinet)

- Uses standard Echelon® LonMark Unit Ventilator functional profile for openness and interoperability with Lon Mark devices.
- Applications include unit ventilators with up to two stages heat/cool; floating heat/cool/economizer, pulse width modulating (PWM) heat/cool/economizer; ASHRAE Cycles I, II, III.
- Two unused digital outputs can be used as free points controlled by the network for lighting, exhaust fan.
- Can be used for indoor air quality control using an external sensor/control and economizer minimum position reset.
- Provides optional energy-saving setpoints for heating/cooling in unoccupied/occupied and standby modes.
- Optional control sequence shutdown via window/door open digital input.
- On-board network jacks for quick commissioning and troubleshooting using the E-Vision configuration tool.
- On-board status LED.
- Free topology transceiver (FTT) for flexible installation.
- UL94-5V flame-retardant construction.

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 Large Size Subpanel, Punched and Screened for controller CPU

14507354-002 Large Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507354-003 Large Size Subpanel, punched and screened for an accessory control panel

14507358-002 Small Size Subpanel, punched and screened for Accessory Control Panel No. 1

14507358-003 Small Size Subpanel punched and screened for Accessory Control Panel

205979 Cable Assembly W7751 MDS

209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 Merchandise Kit - Cable Assembly

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Comments
W7753A2002	2 Heat / 2 Cool, Small (<20 I/O Points)	E-Vision LonSpec	LonWorks Bus	See Application Selection Guide (63-7044)	Staged On/Off Floating Pulse Width Modulation	Inputs One T7770 wall module; Two resistive inputs; Two 1-10 Vdc, 4-20 mA inputs; Four dry contact digital inputs Outputs Eight triac outputs (24 Vac, 500mA, max), One 22Vdc 50 mA output for sensor power

Small to Medium Building Solutions

W7760A Excel 15 Controller



The Excel 15 W7760A Building Manager is a LonMark® compliant device that can be used to monitor and control HVAC equipment and other miscellaneous loads in a distributed network. The optional lithium battery (not included, purchased locally) allows continuous power so trend logs and alarms can be maintained for up to four continuous years. The W7760A Building Manager communicates via the 78 kilobaud Echelon® LonWorks® Network, using a free topology transceiver (FTT).

- Real-time clock with time synchronization and automatic daylight savings time adjustment.
- Time-of-day scheduling.
- Coordinates alarms, reporting, and dial-out.

Dimensions, Approximate: 6 5/32 in. high, 10 19/32 in. wide, 3 7/32 in. deep (156 mm high, 259 mm wide, 82 mm deep)

Application Size: Small (<20 I/O Points)

Building Management Interface: LonStation

Frequency: 50 Hz, 60 Hz

Power Consumption: 20 VA (with no digital outputs)

Operating Temperature Ratings: 32 to 113 F (0 to 45 C)

Shipping Temperature Ratings: 32 to 113 F (0 to 45 C)

Approvals: Underwriters Laboratories UL and cUL listed UL916 as a Class 2 device; FCC Listed Part 15 Subpart J. Class A EC Conforms to European Standards

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

- Energy history, bypass and equipment runtime logging; up to four years continuous backup capabilities with optional lithium battery (purchased separately).
- Programmable control of mechanical equipment and auxiliary points.
- 16 trends, continuous, periodic, delta and one-shot.
- Configurable inputs/outputs are expandable with up to three Excel 10 remote input/output (R/I/O) devices.
- Eight optically-isolated digital outputs are capable of either high- or low-side switching.
- Easy programming with LonSpec® Software.
- Two-piece construction for easy installation.
- Easy access to all I/O points for checkout while operational.
- LonTalk® Network communications protocol.
- LonWorks® Free Topology Transceiver (FTT).
- LonMark® certified.
- Remote Equipment Monitoring and Control.
- Event Counting.
- Demand Limit Control (intelligent shed and restore).
- Setpoint Reset.
- Adaptive Intelligent Recovery™.
- Time-of-Day Bypass.
- General Purpose Configurable (PID) Control Loops (six maximum).
- General Purpose Configurable (Non-Linear) Control Loops. (Improved stability over PID, six maximum).
- Standard Thermostat Control Loops (two maximum).
- Heat Pump Control (two maximum).
- Start/Stop Loops (eight maximum loops, six events per day).

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-002 LARGE SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507354-003 LARGE SIZE SUBPANEL punched and screened for an accessory control panel

14507358-002 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

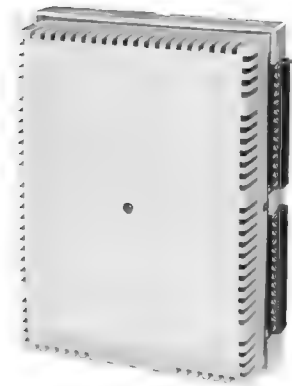
14507358-003 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel

209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 MERCHANDISE KIT

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Comments
W7760A2011	Small (<20 I/O Points)	RapidZone. LonSpec	LonWorks Bus	S7760A Command Display, LonWorks bus	Pulse Width Modulation Analog/Modulating, Staged On/Off Floating	Can also be used to provide timekeeping abilities to the Excel 15C or D

W7760C Excel 15 Controller



Dimensions, Approximate: 7 1/2 in. x 5 1/4 x 1 15/16
(191mm x 133mm x 49mm)

Application Size: Small (<20 I/O Points)

Building Management Interface: LonStation

Frequency: 50 Hz, 60 Hz

Power Consumption: 18 VA max, with no digital outputs

Power Supply: 24Vac

Operating Temperature Ratings: -40 to 150 F (-40 to 65 C)

Shipping Temperature Ratings: -40 to 150 F (-40 to 65 C)

Approvals: Underwriter Laboratories Listed: UL916 (E14480);
Canadian Underwriter Laboratories Listed: UL916 (E14480); Federal
Communications Commission Listed: Part 15 Subpart J, Class A;
European Community Mark: Conforms to European Consortium
standards

The Excel 15 W7760C Plant Controller is used to monitor and control HVAC equipment and other miscellaneous loads in a distributed network.

- Programmable control of mechanical equipment and auxiliary points.
- Configurable inputs/outputs are expandable with up to three Excel 10 Remote Input/Output (RIO) devices.
- 8 digital, 8 analog inputs.
- 8 optically isolated digital outputs; six 0 to 20 mA analog outputs.
- Easy Programming the LonSpec™ Software.
- Two piece construction for easy installation.
- Easy access to all I/O points for checkout while operations.
- LonTalk® Network communication protocol.
- LonWorks® Free Topology Transceiver (FFT).
- Adaptive Intelligent Recovery.
- 8 schedules of five different occupancy states (when used with a W7760A Building Manager).
- Demand Limit Control (from a W7760 Building Manager).

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-002 LARGE SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507354-003 LARGE SIZE SUBPANEL punched and screened for an accessory control panel

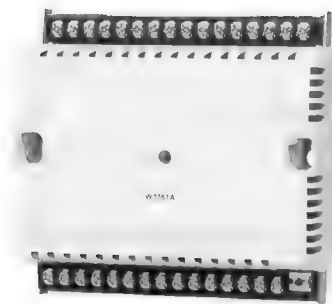
14507358-002 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-003 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel

32002517-001 MERCHANDISE KIT

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Comments
W7760C2017	Small (<20 I/O Points)	RapidZone, LonSpec	LonWorks Bus	S7760A Command Display, LonWorks bus	Pulse Width Modulation, Analog/Modulating, Staged On/Off	Designed to be used with the Light Commercial building solution. Requires a W7760A be connected to the LonWorks bus in order to have scheduling information

W7761 Remote Input/Output Device



Dimensions, Approximate: 5 5/8 in. high, 6 in. wide, 2 1/8 in. deep
(143 mm high, 152 mm wide, 54 mm deep)

Application Size: Small (<20 I/O Points)

Building Management Interface: Excel 5000 Zone Manager

Frequency: 50 Hz, 60 Hz

Humidity Ratings: 5% to 95% noncondensing.

Power Consumption: 6 VA maximum

Power Supply: 24 Vac with a valid range of 20 to 30 Vac

Operating Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Shipping Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Approvals: FCC listed under FCC Part 15 Level B for EMI compliance
Underwrites Laboratories Inc. Listed 1784 CSA, TUV for Safety
Compliance CE Mark

Accessories:

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-003 LARGE SIZE SUBPANEL punched and screened for an accessory control panel

Extends the distribution of input and output devices across an Echelon network.

- Each input/output is individually controlled from the Zone Manager.
- Uses Echelon LonTalk® communication protocol.
- Free topology transceiver (FTT) for flexible installation.
- On-board network jacks.
- On-board status LED.
- Flame retardant construction (UL94-V5 rated).

205979 CABLE ASSEMBLY W7751 MDS

209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-001 Rough-In Ring (Small Cabinet)

14507305-002 Rough in Ring. (Large Cabinet)

14507354-002 LARGE SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-002 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel No. 1

14507358-003 SMALL SIZE SUBPANEL punched and screened for Accessory Control Panel

32002517-001 MERCHANDISE KIT

Product Number	Application Type	Connections	Network Communications	Compatible with:	Output Type	Comments
W7761A2002	Small (<20 I/O Points)	E-Vision, LonSpec	LonWorks Bus	Excel 10s	Pulse Width Modulation, Analog/Modulating, Staged On/Off	Includes an integral setpoint knob, sensor, bypass button, and LED
W7761A2010	2 Heat / 2 Cool Small (<20 I/O Points)	E-Vision, LonSpec	LonWorks Bus	Excel 10s	Pulse Width Modulation, Analog/Modulating, Staged On/Off	Includes an integral setpoint knob, sensor, bypass button, and LED

W7762; W7763 Hydronic Controller



Dimensions, Approximate: 3 5/32 in. high, 4 11/32 in. wide, 1 21/32 in. deep (80 mm high, 110 mm wide, 42 mm deep)
Application Size: Small (<20 I/O Points)
Building Management Interface: EBI, SymmetrE, XBS
Frequency: 50 Hz, 60 Hz
Humidity Ratings: 5% to 95% noncondensing
Network Communications: LonWorks Bus
Power Consumption: 0.5 VA maximum (no load).
Power Supply: 24 Vac \pm 20%
Setpoint Temperature Range: 32 to 158 F (0 to 70 C)
Operating Temperature Ratings: 32° to 122°F (0° to 50°C)
Shipping Temperature Ratings: 32° to 122°F (0° to 50°C)
Approvals: Underwriters Laboratories Inc. Component Recognized: File No. SA481, Canadian Standards Association: File No. LR95329-3

Accessories:

14507289-001 Small size molded plastic door with lock for Excel 5000 system styled cabinet

The W7762 and W7763 Hydronic controllers cover a wide range of control applications including radiators, induction units, fan coil units with manual fan switching, and simple VAV. They are suitable for unit mounting or wall mounting. Controllers operate standalone or as a part of a LonWorks bus network.

- High efficiency, low cost Heat/Cool valve application solution.
- Model with integrated or remote wall module
- LonWorks Open protocol: flexibility now and for the future.
- LonMark profile #8020.
- Direct connection of thermal actuators.
- Wide range of supported valves and actuators

14507289-002 Large size molded plastic door with lock for Excel 5000 system styled cabinet

14507305-001 Rough-In Ring (Small Cabinet)

14507305-002 Rough in Ring. (Large Cabinet)

14507354-001 LARGE SIZE SUBPANEL punched and screened for controller CPU

14507354-002 Large Size Subpanel punched and screened for Accessory Control Panel No. 1

14507354-003 Large Size Subpanel punched and screened for an accessory control panel

14507358-002 Small Size Subpanel punched and screened for Accessory Control Panel No. 1

14507358-003 Small Size Subpanel punched and screened for Accessory Control Panel

205979 Cable Assembly W7751 Mds

209541B Terminator module for FTT network (1 required for T- Tap, Star, Mixed or Loop network topologies, 2 Required for Daisy chain network topology)

32002517-001 Merchandise Kit

Product Number	Application Type	Connections	Compatible with:	Output Type	Comments
W7762B1027	Small (<20 I/O Points)	E-Vision, LonSpec	Excel 10s	Pulse Width Modulation Analog/Modulating Staged On/Off	Includes an integral setpoint knob, sensor, bypass button, and LED
W7763C1016	2 Heat / 2 Cool Small (<20 I/O Points)	E-Vision, LonSpec	Excel 10s	Staged On/Off Pulse Width Modulation Analog/Modulating	Includes an integral setpoint knob, sensor, bypass button, and LED

LCBS Software

Software for Honeywell's Light Commercial Building System (LCBS) consists of RapidZone, LonSpec and LonStation. RapidZone is used primarily for commercial zoning applications and is an easy to use wizard-type program that requires minimal input from the user and then automatically creates a database of the project, which can then be easily commissioned and remotely accessed and monitored. Only a limited set of LCBS controls can be commissioned using RapidZone, although a RapidZone database may be imported into LonSpec to include other controls. LonSpec is primarily a commissioning tool for all LCBS controls.

Using this, the user has access to control loops, math functions etc. LonStation is primarily a monitoring tool used to view any system information either remotely or directly. Schedules and setpoints can also be changed using LonStation.

- Easy-to-use drag and drop setup of LonWorks networks and devices
- Configuration, monitoring and binding of LCBS devices
- Familiar Windows platform user interface
- Training available through the Honeywell Authorized Trainer Program

Building Management Interface: LCBS

System Requirements: 300 MHz Pentium and Windows 2000/XP

Network Communications: LonWorks Bus

Product Number	Compatible with	Description	Comments
ZL7751A1003	Commissions/Monitors Excel 10 VAV controllers, Excel 15 A and C controllers	RapidZone 2.1	
ZL7751A1029	Commissions/Monitors T7300F/Q7300H Thermostat/Subbase, Excel 10 VAV and CVAHU controllers, Excel 15 A and C Controllers	RapidZone 3.0	
ZL7760A1012	Commissions all LCBS controls (except XL15B and RapidLink)	LonSpec 4.3	
ZL7760A1020	Commissions all LCBS controls	LonSpec 4.5	Supports RapidLink and XL15B
ZL7762A1000	Monitors all LCBS controls	LonStation 4.4	Includes graphics
ZL7762A1026	Monitors all LCBS controls	LonStation 4.5	Supports RapidLink and XL15B

T7067 Thermostat and Transmitter



Dimensions, Approximate: 4 5/8 in high, 2 13/16 in wide, 1 1/4 in deep (118 mm high, 71 mm wide, 32 mm deep)

Contact Ratings: —

Frequency: 50 Hz, 60 Hz

Power Supply: Setpoint Temperature Range: 55 F to 85 F (13 C to 29 C)

Operating Temperature Ratings: 55 to 85 F (13 to 29 C)

Shipping Temperature Ratings: 55 to 85 F (13 to 29 C)

T7067A Thermostat and T7067B Transmitter control space temperature when used with W973 Logic Panel.

- Separate heat and cool adjustable set point levers provide adjustable deadband from 3 F to 30 F (2 C to 17 C).
- Separate 1-16 Vdc voltage ramps provide independent heating and cooling signals to W973 Single Zone Logic Panel.
- Two light-emitting diodes (LEDs) under T7067 cover for system checkout.
- C7046A Discharge Air Sensor provides temperature anticipation.
- One T7067 can control up to 6 W973 panels in parallel.
- Mount on standard 2 x 4 in. vertical outlet box or on a non-conductive flat surface.
- All models include wiring plate and locking cover.

Accessories:

229997BZ T7067 Cover

S963D1001 2 Potentiometers that simulate the ramp signals of a T7067 Thermostat

Q667A1005 Subbase for T7067 Thermostat

Q667B1004 Subbase for T7067 Thermostat

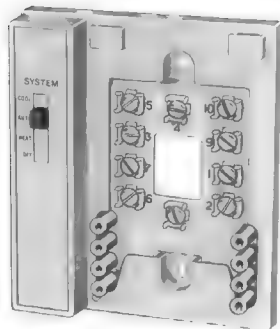
Q667B1012 Single Stage Subbase

Q667B1020 Subbase for T7067 Thermostat

Q667C1003 SINGLE STAGE SUBBASE

Product Number	Application	Application Size	Compatible with:	Control Signal	Output Type	Comments
T7067A1008	Module	Depends on Logic Panel (W973)	Q667 subbase, W973 Logic Panel	W973 single zone	Voltage Ramp	Integral temperature sensor without thermometer; Number of stages of heating and cooling depends on the chosen Logic Panel
T7067B1006	Module	Depends on Logic Panel (W973)	Q667 subbase, W973 Logic Panel	W973 single zone	Voltage Ramp	Must order T7047C,G remote temperature sensor or T7022A remote duct temperature sensor separately

Q667 Switching Subbase



Provide manual switching for T7067 Thermostat/Transmitters.

- Mount directly on wall or on vertical 2 x 4 in. outlet box.
- T7067 mounts on subbase with mounting screws which also complete electrical connections between thermostat/transmitter and subbase.
- When fan switch is set to AUTO, the fan is intermittent in HEAT and continuous in system AUTO or COOL.

Application: Heat Pump Systems, Split Systems, Single Stage Subbase

Dimensions, Approximate: 4 3/4 in. high, 3 15/16 in. wide, 15/16 in. deep. (121 mm high, 100 mm wide, 24 mm deep.)

Electrical Ratings: 1A at 24 Vac Full Load

Color: Beige

Product Number	Application	Switch Position		Comments
		System	Fan	
Q667A1005	Heat Pump Systems, Split Systems,	COOL/AUTO/HEAT/OFF	AUTO/ON	Number of stages of heating and cooling depends on the chosen Logic Panel
Q667B1004	Heat Pump Systems, Split Systems,	COOL/AUTO/HEAT/OFF	AUTO/ON	Number of stages of heating and cooling depends on the chosen Logic Panel
Q667B1020	Heat Pump Systems, Split Systems,	COOL/AUTO/HEAT/OFF	AUTO/ON	Provides intermittent fan operation in cooling when used with W974B
Q667C1003	Single Stage Subbase	COOL/AUTO/HEAT/EM.HT.	AUTO/OFF; OFF position shuts off entire system.	

T7080 Temperature Controller

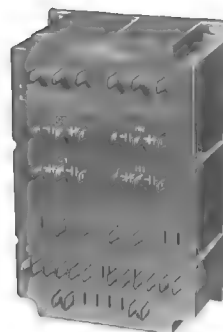


Used in W7080 control system to provide modulating space temperature control.

- Separate heat and cool adjustable set point levers provide adjustable deadband from 3 F to 30 F (2 C to 17 C).
- Single 2 to 22 Vdc voltage ramp provides heating/cooling signal to W7080 Load Analyzer.
- Outputs constant 12 Vdc when sensed temperature is within deadband range.
- Ramp output decreases on call for heat; increases on call for cooling.
- C7100B or C7046B Air Temperature Sensors are used to provide heating/cooling anticipation (one required for each zone thermostat) and can also be optionally used as remote return air temperature sensors with the T7080B transmitter.
- Operates on 24 Vdc supplied by W7080A Load Analyzer.
- Mounts on standard 2 x 4 in. outlet box or on nonconductive flat surface.

Product Number	Application	Application Size	Control Signal	Output Type
T7080A1019	Split System Furnace Packaged RTU	3 Heat / 3 Cool	W7080 control system	Voltage Ramp
T7080B1017	Split System Furnace Heat Pump Systems Packaged RTU	3 Heat / 3 Cool	W7080 control system	Voltage Ramp

W7080 Load Analyzer



Controls heating, cooling and space demand oriented economizer operation in the Honeywell Electronic Dual Set point Multizone control system

- Controls 3 stages of on/off heating, modulated heating, modulated economizer, 3 stages of on/off cooling and modulated cooling.
- Responds to highest heating and cooling demand signal from up to 12 T7080 Zone Thermostat/Transmitters.
- Analyzer is short-circuit protected source of 24 Vdc power for zone thermostat/transmitter, sensor and W7081A Limit Controller Package.
- Switches all stages off when power is interrupted; switches stages on when power is restored.
- Compressor turn-on time delays must be incorporated for each compressor.
- No adjustment or calibrations required.
- Night setback and cooling shutdown for individual or all zones by addition of timeclock.
- Mounts with 4 No. 8 Screws (not provided) through holes in base.

Dimensions, Approximate: 6 1/4 in high, 4 1/8 in wide, 2 5/16 in deep (159 mm high, 105 mm wide, 59 mm deep)

Contact Ratings: NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac, NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac

Frequency: 50 Hz, 60 Hz

Operating Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Shipping Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Approvals: Underwriters Laboratories Inc. Component Recognized, Canadian Standards Association Component Recognized, Meets ASHRAE 90-75 and Department of Defense Guidelines

Product Number	Application	Application Size	Compatible with:	Control Signal	Electrical Connections		Comments
					(inch)	(mm)	
W7080A1016	Split System, Furnace, Packaged RTU	3 Heat / 3 Cool	T7080 Thermostat	W7080 control system	1/4 in male quick-connect terminals	6mm male quick-connect screws	Load analyzer provides control of On/Off and modulated cooling and modulated economizer functions

W7081 Limit Controller



Used with W7080A Load Analyzer to provide cold deck low limit, hot deck high limit, and economizer/mixed air low limit functions.

- Limits the maximum and minimum temperatures of the hot and cold deck and of the mixed air by supplying modified demand signals to the W7080A Load Analyzer and to the economizer.
- The positive limits stabilize deck temperatures under light load conditions providing greater comfort and reducing energy usage.
- Has jumper selectable set points for each of its 3 functions.
- Compact to fit easily in HVAC system control panel.
- Mounts with 4 No. 8 screws (not provided) through holes in base.

Dimensions, Approximate: 6 1/4 in high, 4 1/8 in wide, 2 5/16 in deep (159 mm high, 105 mm wide, 59 mm deep)

Power Consumption: .29VA

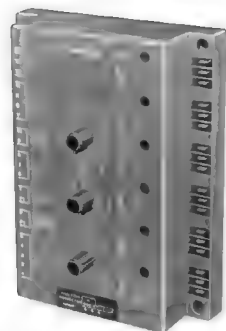
Operating Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Shipping Temperature Ratings: -40 F to +150 F (-40 C to +65 C)

Approvals: Underwriters Laboratories Inc. Component Recognized; Canadian Standard Association, Component recognized; Meets ASHRAE 90-75 and Department of Defense guidelines

Product Number	Application	Application Size	Compatible with:	Control Signal	Electrical Connections	
					(inch)	(mm)
W7081A1015	Split System Furnace Heat Pump Systems Packaged RTU	Small (<20 I/O Points)	W7080 Load analyzer	W7080 control system	1/4 in male quick-connect terminals	6mm male quick-connect screws

W7100A,C Discharge Air Temperature Controller



Maintain an average discharge air temperature in variable air volume (VAV) systems, or other systems requiring discharge air control of multistage cooling or heating. Reduce kilowatt demand and consumption by maintaining the minimum amount of heating or cooling capacity required to hold the discharge air set point. Utilize economizer for free cooling when available.

- W7100 Controller maintains an average discharge air temperature in variable air volume (VAV) cooling systems by modulating an economizer and sequencing stages of mechanical cooling.
- The W7100 can be applied to electric makeup air and other systems requiring discharge air control of multistage heating or cooling.
- Staging capacity of the W7100A,C can be extended six stages using a W7101A Satellite Sequencer.
- When power is interrupted, the system cycles to all stages off.
- When power is restored, the economizer will first be modulated open (if enthalpy is suitable), then stages of mechanical cooling will be sequenced on.
- If enthalpy is not suitable for economizer operation, the first stage of cooling or heating is energized within five minutes.
- Reset signal from either space sensor or outdoor air sensor.

Operating Temperature Ratings: 40 F to 90 F (4 C to 32 C)

Shipping Temperature Ratings: 40 F to 90 F (4 C to 32 C)

Approvals: Underwriters Laboratories Inc. Listed, Component Recognized; File No. SA481, Guide No. SDFY; Canadian Standards Association Certified: File No. LR95329-3

Accessories:

S963B1037 Manual Potentiometer (480 ohm)

S963B1078 Manual Potentiometer (500 ohm)

S963B1128 Manual Potentiometer (135 ohm)

Dimensions, Approximate: 8 5/8 in. high, 6 1/2 in. wide, 3 in. deep (219 mm high, 161 mm wide, 76 mm deep)

Contact Ratings: NO 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac

NC 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac

NO 750 VA inrush @ 120/240 Vac, 75 VA running @ 120/240 Vac

NC 240 VA inrush @ 40 Vac, 30 VA running @ 24 Vac

Frequency: 50 Hz, 60 Hz

Power Consumption: 12 VA at 24 Vac, 50/60 Hz (max).

Power Supply: 20 to 30 Vac

Setpoint Temperature Range: 40 F to 90 F (4 C to 32 C)

Product Number	Application	Application Size	Control Signal	Electrical Connections		Output Type	Comments
				(inch)	(mm)		
W7100A1053	Discharge Air	0 Heat / 6 Cool	W7100 family	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	Additional stages of heating and cooling can be achieved by adding a W7101 Satellite Sequencer
W7100C1018	Discharge Air	2 Heat / 4 Cool	W7100 family	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	Additional stages of heating and cooling can be achieved by adding a W7101 Satellite Sequencer

W7100F,G Discharge Water Temperature Controller



Dimensions, Approximate: 8 5/8 in. high, 6 1/2 in. wide, 3 in. deep
(219 mm high, 161 mm wide, 76 mm deep)

Frequency: 50 Hz, 60 Hz

Electrical Connections: 1/4 in male quick-connect terminals

Power Consumption: 12 VA at 24 Vac, 50/60 Hz (max).

Power Supply: Setpoint Temperature Range: Dependent on S963

Operating Temperature Ratings: -40 F to +150 F (-40 F to +150 F)

Controls discharge water temperature in reciprocating chiller and cooling tower applications.

- The W7100F,G maintains average discharge water temperature by staging on and off compressors, unloaders of water tower fans as required.
- Provides up to six stages of cooling.
- Use W7101A for expanding up to 10 cooling stages.
- Advanced proportional plus integral microprocessor control algorithm minimizes droop.
- Soft start to minimize compressor cycling during system start up.
- Adjustable minimum on/off timing and time delay between stages of either 30 or 60 seconds.
- Reset of discharge water temperature based on either outdoor air or space sensor signal.
- Use C7170 Sensor for sensing water temperature.
- LEDs indicate which stages of cooling are energized.
- Use S963B Potentiometer for remote set point capability.

Shipping Temperature Ratings: -40 F to +150 F (-40 F to +150 F)

Accessories:

S963B1037 Manual Potentiometer (480 ohm)

S963B1078 Manual Potentiometer (500 ohm)

S963B1128 Manual Potentiometer (135 ohm)

Product Number	Application	Application Size	Compatible with:	Control Signal	Output Type	Comments
W7100F1003	Chiller	0 Heat / 4 Cool	W7101 Satellite expansion module	W7100 family	Staged On/Off	Additional stages of heating and cooling can be achieved by adding a W7101 Satellite Sequencer
W7100G1001	Chiller	0 Heat / 6 Cool	W7101 Satellite expansion module	W7100 family	Staged On/Off	4 additional stages of cooling can be added with W7101A

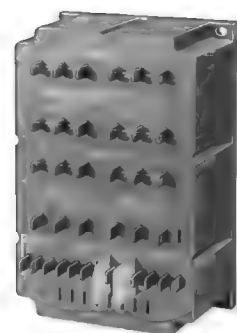
W950 Status Panel



Electrical Connections: Screw terminals

Product Number	Application	Application Size	Compatible with:	Control Signal	Comments	Includes
W950A1056	Interface/ Display	Small (<20 I/O Points)	W973 Logic Panel	W973 single zone	Indication only. For system/fan switching with W973, also use Q667 Subbase	6 indicator lights and accessory faceplate for converting a standard 6-light model to a 4-light model
W950C1047	Single Zone	1 Heat / 1 Cool	W945 Single Zone	W945 Single Zone	Indication, system switching, fan switching; remote set point adjustment in electronic control systems.	
W950G1027	Interface/ Display	Small (<20 I/O Points)	Control Modules other than W973	W973 single zone	Indication, system switching, fan switching; remote set point adjustment in electronic control systems.	—

W973 Logic Panel



Control heating, cooling and economizer operation in commercial air conditioning and heat pump equipment.

Dimensions, Approximate: 6 1/4 in high, 4 1/8 in wide, 2 5/16 in deep (159 mm high, 105 mm wide, 59 mm deep)

Contact Ratings: N.O. 240 VA inrush @ 24 Vac, 60 VA running @ 24 Vac

N.C. 75 VA inrush @ 24 Vac, 30 VA running @ 24 Vac

Frequency: 50 Hz, 60 Hz

Power Consumption: 8 VA

Operating Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

- Proven, reliable temperature control.
- Many flexible versions to meet your application needs.
- Panels can be used with staged gas, oil, or electric heat; modulating gas, hot water, or steam heat; and direct expansion or modulating chilled water cooling.
- Control up to 3 on-off heat or cool stages or up to 10 on-off heat and/or cool stages using W975 Satellite Sequencers.
- Modulating dc current signal controls economizer heating or cooling valve motors.
- T7067 Dual Set Point Thermostat/Transmitter located in controlled space provides heating and cooling input signal based on space demand.
- C7046A sensor located in discharge air duct provides heating/cooling anticipation and economizer modulating low limit signal.
- System cycles all stages off on power interruption.
- When power is restored, system sequences required stages on with timed interstage delay.

Shipping Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

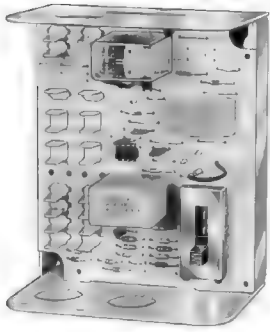
Approvals: Underwriters Laboratories Inc. Component Recognized: File No. SA481, Canadian Standards Association: File No. LR95329-3

Accessories:

4074EAC Resistor Kit. Required for use when using M7364, M7164, M7184, M7186, M7685, M7185 motors with W973

Product Number	Application	Application Size	Compatible with:	Control Signal	Electrical Connections		Output Type	Comments
					(inch)	(mm)		
W973A1017	Split System Furnace Heat Pump Systems Packaged RTU	2 Heat / 2 Cool	T7067 thermostat with Q667 subbase	W973 single zone	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	—
W973B1016	Split System Heat Pump Systems Furnace Packaged RTU	3 Heat / 3 Cool	T7067 thermostat with Q667 subbase	W973 single zone	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	Provides modulating heating output and modulating cooling output
W973E1005	Split System Furnace Heat Pump Systems Packaged RTU	0 Heat / 4 Cool	T7067 thermostat with Q667 subbase	W973 single zone	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	—
W973F1004	Split System Furnace Heat Pump Systems Packaged RTU	4 Heat / 2 Cool	T7067 thermostat with Q667 subbase	W973 single zone	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	—
W973J1017	Split System Furnace Heat Pump Systems Packaged RTU	4 Heat / 4 Cool	T7067 thermostat with Q667 subbase	W973 single zone	1/4 in male quick-connect terminals	6mm male quick-connect screws	Staged On/Off	—

W974 Setback/Setup Module



Used with W973 Logic Panel to conserve energy during building unoccupied periods.

- Cooling shutdown closes the outdoor air damper and prevents cooling equipment operation.
- Heating setback is field selectable for 5, 8, 12 or 15 degrees F (2.8, 4.4, 6.7, or 8.3 degrees C).
- Convenient, male quick-connect terminals facilitate wiring.
- Compact to fit easily within air conditioning equipment control panels.
- Mount in any position on a flat surface.

Dimensions, Approximate: 5 5/16 in high, 4 1/8 in wide, 3 in deep
(135 mm high, 105 mm wide, 76 mm deep)

Product Number	Application	Application Size	Compatible with:	Control Signal	Comments
W974B1006	Module	Small (<20 I/O Points)	W973 Logic Panel	W973 single zone	Used with W973 Logic Panel to conserve energy during unoccupied periods

OS Number	Description	Used With
32006150-002	W7753 - EPROM Upgrade kit, version 1.00.09	W7750C, W7753

Environmental Control Systems Replacement Parts



OS Number	Description	Used With
113591	Potentiometer	
15865AQ	W950 bag assembly consists of faceplate label inserts and red and green lens colors	
190821	Replacement Bulbs	
195770A	Test Plug	

Environmental Control Systems Accessories

For checkout of W973 Logic Panels and W975 Satellite

Sequencers.

- Simulates the HEAT and COOL ramp signal of a T7067 Dual Set Point Thermostat and the economizer low limit function.
- Consists of 2 potentiometers and a resistor assembly mounted in a test box.
- Provides a heat/cool ramp signal from less than 2 Vdc (min) to 16.6 Vdc (max).
- Provides an Economizer low limit signal from 4.0 Vdc (equivalent to 45 F (7 C) at the C7046 Discharge Sensor) to 4.5 Vdc (equivalent to 69 F (21 C)).
- Four test leadwires have color-coded bands with corresponding W973 terminal numbers.
- Leadwires have alligator clips for easy connection to W973 terminals.

OS Number	Description	Used With	
4074EAC	Resistor Kit. Required for use when using M7364, M7164, M7184, M7186, M7685, M7185 motors with W973		
4074EAE	Resistor Kit. Required to allow independent economizer low limit operation when one T7067 drives multiple W973 Logic Panels		
4074EEP	Bag Assembly consisting of Taping Screws, Allen Wrench, Round Head Screws and Socket Screws		
S963B1037	Manual Potentiometer (480 ohm)		
S963B1078	Manual Potentiometer (500 ohm)		
S963B1086	Manual Potentiometer (1000 ohm)		
S963B1128	Manual Potentiometer (135 ohm)		
S963B1136	Manual Potentiometer (270 ohm)		
S963B1177	Manual Potentiometer (480 ohm)		
S963D1001	2 Potentiometers that simulate the ramp signals of a T7067 Thermostat		

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Humidity Controllers

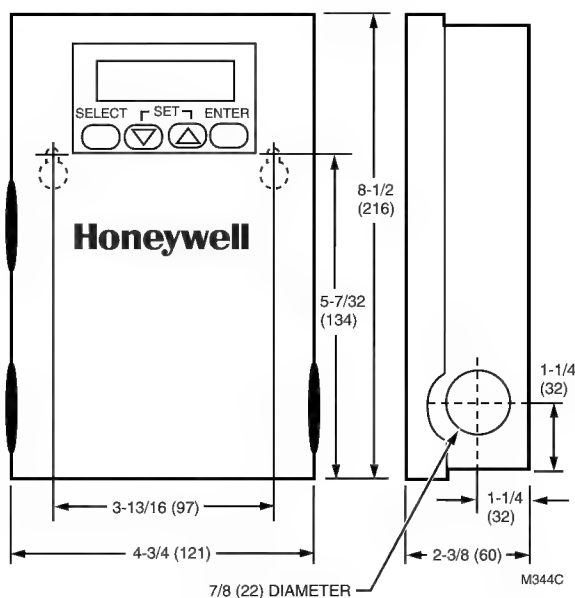
H775 Remote Humidity Controllers



Provide humidity control for ducts, greenhouses, computer rooms, printing and photographic laboratories, and other applications where electronic accuracy, as well as remote sensing, is desired.

- Uses C7600B or C7600C Humidity Sensors or any humidity sensor providing either a 2 to 10 Vdc or 4 to 20 mA output.
- Adjustable switching differential.
- Liquid crystal display indicates sensed percent RH, mode and output status.
- Keypad provides ease of programming and operation.
- RH display accuracy: 1 percent, when used with 1 percent sensor. Inputs accept industry standard sensors.
- Adjustable throttling range of 1 to 15 percent RH. (Set Throttling Range equal to Time Constant of sensor in minutes.)

Dimension Diagrams



Contact Ratings:

- 9.8 A FL @ 120 Vac
- 58.8 A LR @ 120 Vac
- 4.9 A FL @ 240 Vac
- 29.4 A @ 240 Vac
- 125 VA pilot duty at 120 and 240 Vac

Electrical Connections: terminals

Supply Voltage: 24 Vac

Frequency: 50 Hz, 60 Hz

Type: Electric

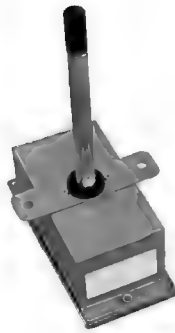
Approvals:

Canadian Standards Association: Certified: File No. LR95329-3

Underwriters Laboratories, Inc: File:E4436, Guide: XAPX

	Product Number	Number of Sensors	Control Modes	Switching	Use With Sensor	Comments
*	H775A1006	1	Staged on/off (1 SPDT stages)	1 SPDT	C7600B or C7600C	
	H775A1022	1	Staged on/off (2 SPDT stages)	2 SPDT	C7600B or C7600C	
	H775A1048	1	Staged on/off (3 SPDT stages)	3 SPDT	C7600B or C7600C	
	H775A1063	1	Staged on/off (4 SPDT stages)	4 Spdt	C7600B or C7600C	
	H775B1005	2	Staged on/off (2 SPDT stages)	2 SPDT	C7600B or C7600C	
	H775C1004	2	Staged on/off (four stages) or floating duct limit reset control	4 Spdt	C7600B and C7600C	Duct limit reset algorithm requires two sensors. One sensor for humidity control, another sensor for reset and to prevent duct saturation
	H775D1003	2	Modulating (4 to 20 mA) duct reset control with two auxiliary (spdt) outputs	2 SPDT auxiliary	C7600B or C7600C (Requires Two Humidity Sensors to Operate)	Duct limit reset algorithm requires two sensors. One sensor for humidity control, another sensor for reset and to prevent duct saturation
* TRADELINE models • SUPER TRADELINE models						

H7620, H7621, H7630, H7631 Humidity Transducers



The H7620, H7621, H7630 and H7631 are extremely fast, stable and accurate humidity transducers designed for harsh environments. The polymer capacitance sensor is not affected by harsh contaminants, condensation, fog or extremely high humidity over a prolonged period of time.

- Ultra-fast response polymer capacitance sensor.
- Not affected by condensation, fog, high humidity or contaminants.
- Highly accurate, repeatable, stable output with negligible hysteresis.
- Wide 12 to 40 Vdc or 12 to 30 Vac unregulated supply voltage.
- Two temperature compensated output versions, 4 to 20 mA (2-wire) or field selectable 0 to 5 Vdc or 0 to 10 Vdc (3-wire).
- Non-interacting zero and span trimmers.
- NIST traceable $\pm 2\%$ or $\pm 3\%$ calibration.
- Two enclosure types NEMA 4 (IP-65) duct mount or aesthetically appealing ABS plastic wall mount.
- Short circuit and reverse polarity protected.
- Conforms to EMC standards EN50082-1, EN55014 and EN60730-1.

Application: Remote Humidity Sensor Stand-Alone Controller or DDC Control System

Dimensions, Approximate: 5 1/32 high, 3 5/32 wide, and 1.0 deep (128 mm high, 80 mm wide, 25 mm deep)

Operating Humidity Range: 0 to 100% RH

Operating Temperature Range: -30 F to +130 F (-35 C to +55 C)

Used With: XL15, XL10: CVAHU (models B and C), Unit Vent, RIO, H775 (4 to 20 mA only)

Product Number	Application Type	Mounting Type	Insertion Length		Color	Output Signal	Relative Humidity Accuracy (%)	Sensor Type	Comments
			(inch)	(mm)					
H7620A1003	Remote Humidity Sensor	Wall mounted	—	—	Taupe	4 to 20 mA	+/-2%	Ultra-fast Response Polymer Capacitance Sensor	2-wire
H7620B1001	Remote Humidity Sensor	Duct Mounted	6 in.	152 mm	Gray Baked on Enamel (PMS2GR88B)	4 to 20 mA	+/-2%	Ultra-fast Response Polymer Capacitance Sensor	2-wire
H7621A1002	Remote Humidity Sensor	Wall mounted	—	—	Taupe	0 to 10 Vdc (or 0 to 5 Vdc)	+/-2%	Ultra-fast Response Polymer Capacitance Sensor	3-wire
H7621B1000	Remote Humidity Sensor	Duct Mounted	6 in.	152 mm	Gray Baked on Enamel (PMS2GR88B)	0 to 10 Vdc (or 0 to 5 Vdc)	+/-2%	Ultra-fast Response Polymer Capacitance Sensor	3-wire
H7621C1008	Remote Humidity and Temperature Sensor	Duct Mounted	—	—	Gray Baked on Enamel (PMS2GR88B)	0 to 10 Vdc (or 0 to 5 Vdc)	+/-2%	Ultra-fast Response Polymer Capacitance Humidity Sensor and 20K NTC Temperature Sensor	3-wire for Humidity, 2 wires for Temperature (20K Ohm at 77 F)
H7630A1001	Remote Humidity Sensor	Wall mounted	6 in.	152 mm	Taupe	4 to 20 mA	+/-3%	Ultra-fast Response Polymer Capacitance Sensor	2-wire
H7630B1009	Remote Humidity Sensor	Duct Mounted	6 in.	152 mm	Gray Baked on Enamel (PMS2GR88B)	4 to 20 mA	+/-3%	Ultra-fast Response Polymer Capacitance Sensor	2-wire
H7631A1000	Remote Humidity Sensor	Wall mounted	—	—	Taupe	0 to 10 Vdc (or 0 to 5 Vdc)	+/-3%	Ultra-fast Response Polymer Capacitance Sensor	3-wire
H7631B1008	Remote Humidity Sensor	Duct Mounted	6 in.	152 mm	Gray Baked on Enamel (PMS2GR88B)	0 to 10 Vdc (or 0 to 5 Vdc)	+/-3%	Ultra-fast Response Polymer Capacitance Sensor	3-wire
H7631C1006	Remote Humidity and Temperature Sensor	Duct Mounted	6 in.	152 mm	Gray Baked on Enamel (PMS2GR88B)	0 to 10 Vdc (or 0 to 5 Vdc)	+/-3%	Ultra-fast Response Polymer Capacitance Humidity Sensor and 20K NTC Temperature Sensor	3-wire for Humidity, and 2 wires for Temperature (20K Ohm at 77 F)

* TRADELINE models • SUPER TRADELINE models

Pressure Controllers

P906 Differential Pressure Controllers



- The P906 controllers respond to increases and decreases in pressure difference between high and low pressures in water or steam systems. The P906 provides proportional control in low voltage circuits and can be used to control a proportional valve to maintain desired pressure difference between two points in a system
- P906 provides proportional control using a 135-ohm potentiometer.
 - Adjustable main spring determines pressure difference at which controller operates and against which difference in high and low pressure must act.
 - Three mounting lugs furnished on each device to facilitate installation.
 - Blank scale supplied for marking as required.

Dimensions, Approximate: 7 7/8 in. high, 11 7/16 in. wide, 3 5/16 in. deep (200 mm high, 291 mm wide, 84 mm deep)

Connections: Includes (2) 1/4 x 1/2 in NPT couplings for connecting to flexible steam hose (8 in min)
Type of Control: Electric

Product Number	Pressure Ranges	Differential Pressure Range		Output	Comments
		(psi)	(kPa)		
P906A1024	0 to 20 psi	0 to 10 psi	0 to 69 kPa	135 Ohm	Controls a proportional valve to maintain a selected pressure difference between two points.
P906A1032	2 to 85 psi	0 to 50 psi	0 to 345 kPa	135 Ohm	Controls a proportional valve to maintain a selected pressure difference between two points.
P906A1040	5 to 225 psi	0 to 70 psi	0 to 483 kPa	135 Ohm	Controls a proportional valve to maintain a selected pressure difference between two points.

* TRADELINE models • SUPER TRADELINE models

H409 Anticondensate Heater Controller



Application: Controls anticondensate heaters in refrigerated cases
Dimensions, Approximate: 9 15/19 in high, 7 in wide, 2 15/16 in deep
 (252 mm high, 178 mm wide, 75 mm deep)
Sensor Element: Nylon Ribbon for RH liquid filled bulb for temperature
Approvals:
Canadian Standards Association: Listed

Senses actual moisture content in the air to provide control of anticondensate heaters.

- Reduces energy usage by automatically adjusting anticondensate heater cycling in response to changing dew point.
- Switches heater load directly by extended life (700,000 cycles) heavy duty relay.
- Adjustable setpoint.
- Enclosed snap switch provides long, trouble free operation.
- Installs easily to side of display case, or to a wall or column.
- Controls one or more refrigerated cases.

Underwriters Laboratories, Inc: listed
Contact Ratings:

120 Vac
16A resistive at 120Vac.

Product Number	Switching	Description	Comments
H409A1002	1 SPST	Anti-Condensate Controller, Switching: 1 SPST	Operating range: 55 to 85 F (13 to 30 C), Adjustable setpoint
* TRADELINE models • SUPER TRADELINE models			

H609 Dew Point Controller



Application: On-off control of Air conditioning Equipment
Dimensions, Approximate: 7 1/16 in high, 5 1/8 in wide, 3 3/16 in deep
 (179 mm high, 130 mm wide, 81 mm deep)
Sensor Element: Nylon Ribbon for RH liquid filled bulb for temperature
Approvals:
Canadian Standards Association: Listed

Senses actual moisture content in the air. Combines temperature and humidity sensors for more accurate dew point control.

- Spdt switch opens or closes circuit as ambient dew point provides a variable dew point control range.
- Provides accurate ON-OFF control of dehumidification.

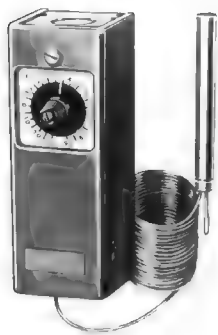
Underwriters Laboratories, Inc: listed
Contact Ratings:

24 Vac	120 Vac	240 Vac
50 VA @ 24 Vac	Terminals 2-1 (N.C.) 5A FI @ 120 Vac, 18 ALR @ 120 Vac	1.5 AFL @ 240 Vac, 9 ALR @ 240 Vac

Product Number	Switching	Description	Comments
H609A1007	1 SPDT	Dew point Controller, Switching: 1 SPDT	Operating range: 55 to 85 F (13 to 30 C) Provides accurate On-Off control of dehumidification
* TRADELINE models • SUPER TRADELINE models			

Refrigeration Controllers

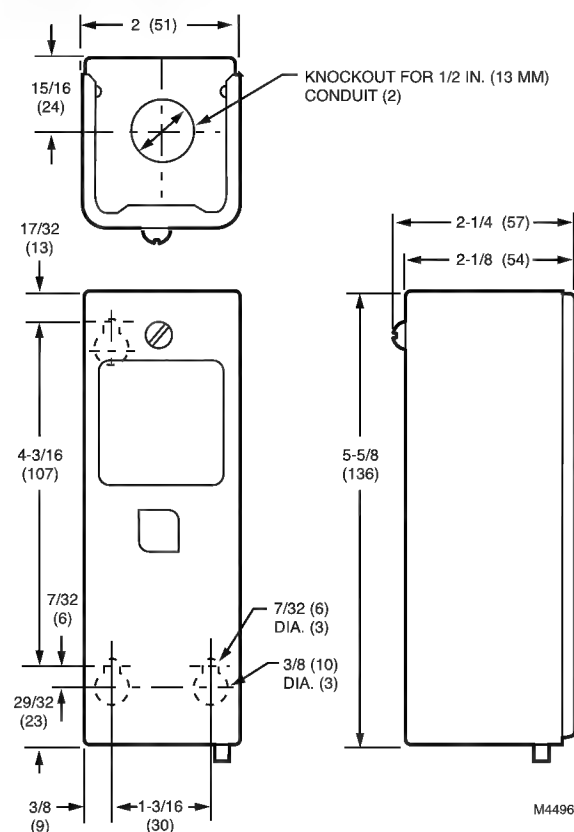
T678G; T4031A; T6031A,K Refrigeration Temperature Controller



Provide limit or temperature control in refrigerated areas where remote mounting of sensing element is required.

- Liquid-filled copper elements provide rapid sensing to control the compressor system.
- Control temperature in a duct, tank, freezer or cooler.
- Controller element can be directly immersed in the controlled medium.
- Adjustable control setpoint.
- Ambient temperature compensation provides good temperature control. Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.

Dimension Diagrams



Application: Provides control of cooled or refrigerated space

Dimensions, Approximate: 5 5/8 in high, 2 in wide, 2 1/4 in deep (143 mm high, 51 mm wide, 57 mm deep)

Maximum Operating Temperature: 125 F (52 C)

Sensor Element: Copper bulb

Type: Remote bulb

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: File: SA481, Guide: SPFY

Contact Ratings:

	120 Vac	240 Vac
T4031A	8 AFL @ 120 Vac, 48 ALR @ 120 Vac	5.1 AFL @ 240 Vac, 30.6 ALR @ 240 Vac
T6031A, K; T678G	8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR

Product Number	Setting Temperature Range		Bulb Size		Capillary Length		Differential Temperature		Switching	Comments
	(F)	(C)	(inch)	(mm)	(ft)	(m)	(F)	(C)		
T4031A1016	-30 F to 50 F	-34 C to 10 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5 ft	1.52 m	1.0 F	0.6 C	1 SPST	—
T4031A1073	-30 F to 50 F	-34 C to 10 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	8 ft	2.44 m	3.5	1.6	1 SPST	—
T6031A1011	15 F to 90 F	-9 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5 ft	1.5 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
• T6031A1029	-30 F to 90 F	-34 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	8 ft	2.4 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
T6031A1052	-30 F to 90 F	-34 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5 ft	1.5 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—

* TRADELINE models • SUPER TRADELINE models

Refrigeration Controllers

Product Number	Setting Temperature Range		Bulb Size		Capillary Length		Differential Temperature		Switching	Comments
	(F)	(C)	(Inch)	(mm)	(ft)	(m)	(F)	(C)		
T6031A1060	-30 F to 90 F	-34 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	20 ft.	6.1 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
T6031A1086	-31 F to 86 F	-35 C to 30 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	8 ft	2.4 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	Celsius model
T6031A1136	-30 F to 90 F	-34 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	8 ft	2.4 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
T6031A1250	-20 F to 100 F	-29 C to 38 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	8 ft	2.4 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
T6031A1276	15 F to 90 F	-9 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5 ft	1.5 m	3.5 F to 16 F	1.9 C to 8.9 C	1 SPDT	—
T6031A1284	15 F to 90 F	-9 C to 32 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5 ft	1.5 m	10 F	5.6 C	1 SPDT	Trol-A-Temp Special
T6031K1001	15 F to 75 F	-9 C to 24 C	3/8 in. diameter, 3 in. long	10 mm diameter, 76 mm long	5.5 ft	1.7 m	5 F	2.8 C	1 SPDT	—
T678G1001	15 F to 75 F	-9 C to 24 C	3/8 in. diameter 6 1/4 in. long	10 mm x 159 mm	5.5 ft	1.7 m	3 F	1.7 C	2 SPDT switch contacts	—
* TRADELINE models • SUPER TRADELINE models										

L480; L482 Refrigeration Controller



Used to limit or control temperature in air conditioning systems or refrigerated enclosures.

- Applications include freezer cabinets, display cases, beverage coolers, milk cooling tanks and air conditioners.
- Can act as a frost alarm operator in storehouses or orchards where frost would damage crops or equipment.
- Dual temperature scaleplate provided for both Fahrenheit and Celsius readings.

Application: Acts as frost alarm in storehouses, orchards, or other locations where frost could damage crops or equipment.

Dimensions, Approximate: 3 5/16 in high, 3 11/16 in. wide, 2 5/16 in deep (84 mm high, 94 mm wide, 59 mm deep)

Maximum Operating Temperature: 225 F (107 C)

Sensor Element: Averaging

Type: Averaging element

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Underwriters Laboratories, Inc: File: SA481, Guide: SDFY

Contact Ratings:

120 Vac	240 Vac
10.2 AFL, 61.2 ALR	6.5 AFL, 39.0 ALR

Product Number	Setting Temperature Range		Capillary Length		Differential Temperature		Switching	Comments
	(F)	(C)	(ft)	(m)	(F)	(C)		
L480B1239	20 F to 60 F	-7 C to 16 C	20 ft.	6.1 m	10 F	5.6 C	1 SPDT	
L480G1044	20 F to 60 F	-7 C to 16 C	20 ft.	6.1 m	10 F	5.6 C	1 SPST	Manual reset
L482A1004	15 F to 55 F	-10 C to +15 C	20 ft.	6.1 m	10 F	5.6 C	2 SPST (one N.C., one N.O.)	
* TRADELINE models • SUPER TRADELINE models								

Temperature Controllers

T4031C; T6031C,D,F,G Ambistat Controller



Ambient temperature compensated, high-limit controllers for agriculture and industrial applications.

- Suitable for line-voltage, low voltage, or millivolt (Powerpile) control of bulk milk tanks, beverage dispensing machines, ice cube machines, dishwashers, crop drying, tobacco curing, and similar applications.
- Enclosed snap action switches available with spst or spdt action.
- Models available that make or break on temperature rise.
- Screwdriver adjustment for temperature setting; external knob option.
- Immersion well not included.

Application: Line-voltage, low-voltage or millivolt (Powerpile) control of bulk milk tanks, beverage dispensing machines, ice cube machines, dishwashers, crop drying, tobacco curing and similar applications.

Type: Remote bulb

Bulb Size: 2 7/8 in. long, 3/8 in. diameter (73 mm long, 10 mm diameter)

Number of Sensors: 1

Frequency: 50 Hz, 60 Hz

Approvals:

Canadian Standards Association: Listed

Underwriters Laboratories, Inc: Component Recognized

Contact Ratings:

120 Vac	240 Vac
8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR

Replacement Parts:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

112622AA Well Assembly, 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

121371B Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

121371L Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp.

123869A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.

123870A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.

7617ABY Compression Fitting, brass 1/2 in. NPT plug

7617M Compression Fitting, brass 1/2 in. NPT plug

Product Number	Capillary Length		Setpoint Temperature Range		Maximum Operating Temperature		Differential Temperature		Sensor Element	Output	Comments	Includes
	(ft)	(m)	(F)	(C)	(F)	(C)	(F)	(C)				
T4031C1004	8 ft	2.4 m	40 F to 180 F	4 C to 82 C	205 F	96 C	5 F	2.8 C	Copper	1 SPST	Break on temperature rise	—
T4031C1012	5.5 ft	1.7 m	40 F to 180 F	4 C to 82 C	205 F	96 C	5 F	2.8 C	Copper	1 SPST	Break on temperature rise	—
* T6031C1009	5.5 ft	1.7 m	40 F to 180 F	4 C to 82 C	205 F	96 C	2 F	1.1 C	Copper bulb	1 SPDT	Trol-A-Temp Special	107324A Duct Bulb holder
T6031C1041	5.5 ft	1.7 m	41 F to 176 F	5 C to 80 C	205 F	96 C	2 F	1.1 C	Copper bulb	1 SPDT	—	—
T6031C1058	5 ft	1.5 m	100 F to 240 F	38 C to 116 C	265 F	130 C	2 F	1.1 C	Stainless steel bulb	1 SPDT	—	—
T6031D1007	7.5 ft.	2.3 m	40 to 180 F	4 C to 82 C	205 F	96 C	5 F	2.8 C	Copper bulb	1 SPDT	—	—
T6031D1015	5.5 ft	1.7 m	40 to 180 F	4 C to 82 C	—	—	5 F	2.8 C	Copper bulb	1 SPDT	—	—
T6031D1031	5.5 ft	1.7 m	0 F to 70 F	-18 C to 21 C	170 F	77 C	5 F	2.8 C	Copper bulb	1 SPDT	—	—
T6031D1049	5.5 ft	1.7 m	30 F to 270 F	-1 C to 132 C	305 F	152 C	7 F	3.9 C	Copper bulb	1 SPDT	—	—
T6031G1000	6.25 ft.	1.6 m	0 F to 90 F	-18 C to 32 C	155 F	68 C	2 F	1.1 C	Copper bulb	1 SPDT	Back Mounting	—

* TRADELINE models • SUPER TRADELINE models

T4054 Return Air Controller



Application: Provides control in heating systems

Type: Filled element, Fast response element

Accuracy: ± 6 F (± 3.3 C)

Color: Gray

Maximum Operating Temperature: 125 F (52 C)

Frequency: 50 Hz, 60 Hz

Provides spdt heavy-duty, line-voltage temperature control in ventilation, heating or cooling systems.

- Use in a variety of farm, industrial or commercial applications.
- Wall or duct mount in any position.
- Fast response, tin-plated element not affected by adverse environment.
- Rugged case.
- Mounts on flat surface with three screws.
- T6064 provide fast response with hydraulic temperature sensing elements mounted on the unit.

Approvals:

Canadian Standards Association: CSA Listed: Report -1

Underwriters Laboratories, Inc: Listed: E4436, vol. 5, sec. 12, Guide XAPX

Contact Ratings:

120 Vac	240 Vac
16.0 AFL, 96.0 ALR	8.0 AFL, 48.0 ALR

Product Number	Number of Sensors	Differential Temperature		Setpoint Temperature Range		Sensor Element	Output	Comments
		(F)	(C)	(F)	(C)			
T4054A1000	1	3.5 F	1.9 C	36 F to 100 F	2 C to 38 C	Fast response capillary	1 SPST	Make R to B on temperature fall
T4054B1016	1	3.5 F	1.9 C	36 F to 100 F	2 C to 38 C	Fast response capillary	1 SPST	Make R to W on temperature rise

* TRADELINE models • SUPER TRADELINE models

T6054 Utility Line Voltage Thermostat



Provides spdt heavy-duty, line-voltage temperature control in ventilation, heating or cooling systems.

- Use in a variety of farm, industrial or commercial applications.
- Wall or duct mount in any position.
- Fast response, tin-plated element not affected by adverse environment.
- Rugged case.
- Mounts on flat surface with three screws.

Application: Provides control in ventilation, heating, cooling or heating-cooling systems

Type: Filled element

Accuracy: ± 10 F (± 5.6 C)

Color: Gray

Number of Sensors: 1

Frequency: 50 Hz, 60 Hz

Approvals:

Canadian Standards Association: CSA Listed: Report -1

Underwriters Laboratories, Inc: Listed: E4436, vol. 5, sec. 12, Guide XAPX

Contact Ratings:

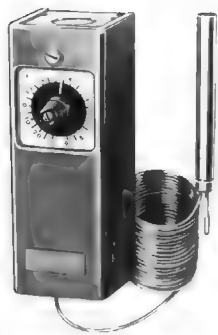
120 Vac	240 Vac
7.4 AFL, 44.4 ALR	3.7 AFL, 22.2 ALR

Product Number	Maximum Operating Temperature		Differential Temperature		Setpoint Temperature Range		Sensor Element	Output	Comments	Includes
	(F)	(C)	(F)	(C)	(F)	(C)				
* T6054A1005	125 F	52 C	3.5 F	1.9 C	-30 F to 110 F	-34 C to 43 C	Copper filled element	1 SPDT	—	Case
T6054A1054	125 F	52 C	3.5 F	1.9 C	35 F to 110 F	2 C to 43 C	Copper filled element	1 SPDT	Cover is brushed zinc	Case

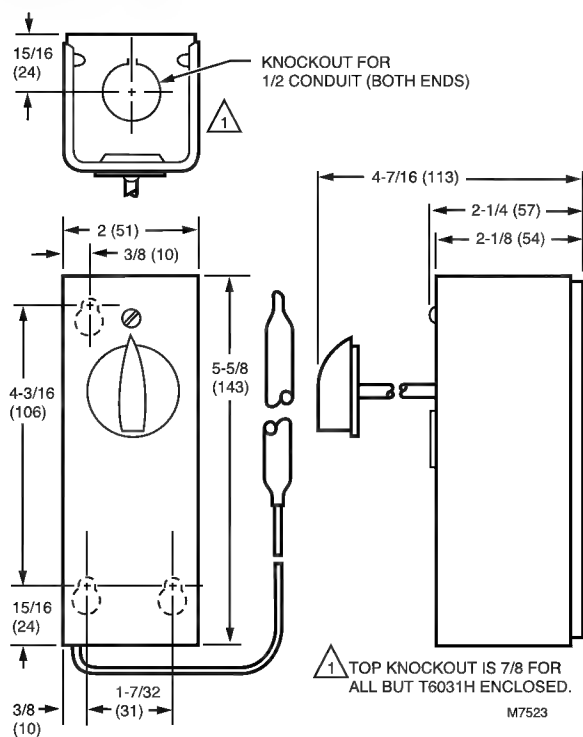
* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

T6031E Unit Thermostat



Dimension Diagrams



Used for space temperature control of room air conditioning units or radiator valves.

- When used with changeover switch or thermostat, these devices can control both heating and cooling.
- Sensing bulb installed in return airflow.
- One light duty spdt switch.
- Enclosed switches resist effects of dust and moisture.
- Setpoint adjustment with knob on front of thermostat.
- Temperature scale marked Warmer-Cooler.

Application: Remote bulb temperature control

Type: Remote bulb

Color: Gray

Number of Sensors: 1

Frequency: 50 Hz, 60 Hz

Approvals:

Canadian Standards Association: Listed

Underwriters Laboratories, Inc: Component Listed

Contact Ratings:

120 Vac	240 Vac
3.2 AFL, 19.2 ALR	1.6 AFL, 9.6 ALR

Replacement Parts:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

112622AA Well Assembly., 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

121371B Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

121371L Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp.

123869A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.

123870A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.

7617ABY Compression Fitting, brass 1/2 in. NPT plug

7617M Compression Fitting, brass 1/2 in. NPT plug

Product Number	Bulb Size		Capillary Length		Maximum Operating Temperature		Differential Temperature		Setpoint Temperature Range		Sensor Element	Output
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)	(F)	(C)		
T6031E1004	5/16 in. diameter, 11 11/16 in. long	8 mm diameter, 297 mm long	5.5 ft	1.7 m	150 F	66 C	1.5 F	0.8 C	55 F to 90 F	13 C to 32 C	Copper bulb	1 Spdt

* TRADELINE models • SUPER TRADELINE models

T675A,B; T678A Remote Bulb Controllers



Application: Regulates temperature of air or liquids in ducts, pipes, tanks and boilers

Type: Remote bulb

Number of Sensors: 1

Frequency: 50 Hz, 60 Hz

Output:

T675	1 SPDT
T678	2 SPDT switch contacts

Contact Ratings:

120 Vac	240 Vac	277 Vac
8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR	4.2 AFL, 25.2 ALR

Approvals:

Canadian Standards Association: CSA Listed: Report -1

Underwriters Laboratories, Inc: UL Listed: E4436, Vol. 4, Sec. 11, Guide XAPX

Replacement Parts:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

112622AA Well Assembly, 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper

Remote bulb thermostats regulate temperature of air or liquids in ducts, pipes, tanks and boilers.

- Suitable for applications requiring temperature control of air or liquids where controller must be placed outside the sensing area.
- Typical uses include control of dampers and valves in heating, cooling and heating-cooling systems.
- Fast response models (available for use in return air duct) operate approximately four times faster than standard models.
- Controller can be mounted in any position.
- Ambient temperature compensation provides good temperature control. Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.

112630AA Well Assembly, 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

121371B Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

121371L Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp.

123869A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.

123870A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.

131524A Capillary Holder Assembly, 8 3/8 in. long, duct insertion

311266D Bulb Holder Assembly, T4031, use with copper elements only

7617ABY Compression Fitting, brass 1/2 in. NPT plug

7617M Compression Fitting, brass 1/2 in. NPT plug

7640HX Mounting Kit, controller and averaging element

Product Number	Setpoint Temperature Range		Maximum Operating Temperature		Differential Temperature		Bulb Size		Capillary Length		Sensor Element	Comments
	(F)	(C)	(F)	(C)	(F)	(C)	(inch)	(mm)	(ft)	(m)		
T675A1045	0 F to 100 F	-18 C to 38 C	125 F	52 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 106 mm	20 ft.	6.1 m	Stainless steel bulb	—
T675A1102	160 F to 260 F	71 C to 127 C	280 F	138 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 106 mm	20 ft.	6.1 m	Copper bulb	—
T675A1136	0 F to 100 F	-18 C to 38 C	125 F	52 C	1 F fixed	0.6 C fixed	1/2 in. x 4 3/16 in.	13 mm x 106 mm	20 ft.	6.1 m	Copper bulb	—
T675A1243	167 F to 257 F	75 C to 125 C	125 F	52 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 106 mm	5 ft	1.5 m	Copper bulb	Celsius model
T675A1425	55 F to 175 F	13 C to 79 C	200 F	93 C	3.6 F to 12 F	2 C to 6.7 C	1/2 in. x 3 9/16 in.	13 mm x 90 mm	20 ft.	6.1 m	Copper bulb	—
T675A1441	55 F to 175 F	13 C to 79 C	200 F	93 C	3.6 F to 12 F	2 C to 6.7 C	1/2 in. x 3 9/16 in.	13 mm x 90 mm	20 ft.	6.1 m	Stainless steel bulb	—
T675A1458	55 F to 175 F	13 C to 79 C	200 F	93 C	1 F fixed	0.6 C fixed	1/2 in. x 3 9/16 in.	13 mm x 90 mm	5 ft	1.5 m	Copper bulb	—
* T675A1508	0 F to 100 F	-18 C to 38 C	125 F	52 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 106 mm	5 ft	1.5 m	Copper bulb	Includes 107324A duct bulb holder
* T675A1516	0 F to 100 F	-18 C to 38 C	125 F	52 C	1 F fixed	0.6 C fixed	1/2 in. x 4 3/16 in.	13 mm x 106 mm	5 ft	1.5 m	Copper bulb	Includes 107324A duct bulb holder
T675A1524	55 F to 175 F	13 C to 79 C	200 F	93 C	1 F fixed	0.6 C fixed	1/2 in. x 3 9/16 in.	13 mm x 90 mm	20 ft.	6.1 m	Copper bulb	—

* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

Product Number	Setpoint Temperature Range		Maximum Operating Temperature		Differential Temperature		Bulb Size		Capillary Length		Sensor Element	Comments
	(F)	(C)	(F)	(C)	(F)	(C)	(inch)	(mm)	(ft)	(m)		
* T675A1532	160 F to 260 F	71 C to 127 C	280 F	138 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 106 mm	5 ft	1.5 m	Copper bulb	Includes 107324A duct bulb holder
* T675A1540	55 F to 175 F	13 C to 79 C	200 F	93 C	3.6 F to 12 F	2 C to 6.7 C	1/2 in. x 3 9/16 in.	13 mm x 90 mm	5 ft	1.5 m	Copper bulb	Includes 107324A duct bulb holder
* T675A1565	0 F to 100 F	-18 C to 38 C	125 F	52 C	3 F to 10 F	1.7 C to 5.6 C	1/2 in. x 4 3/16 in.	13 mm x 90 mm	20 ft.	6.1 m	Copper bulb	Includes 107324A duct bulb holder
* T675A1706	0 F to 100 F	-18 C to 38 C	125 F	52 C	3 F to 10 F	1.7 C to 5.6 C	1 1/2 in. diameter x 5 in.	38.1 mm x 127 mm	5 ft	1.5 m	Fast response capillary	Fast response model, Includes 131524A duct bulb holder
* T675A1722	55 F to 175 F	13 C to 79 C	200 F	93 C	3.6 F to 12 F	2 C to 6.7 C	1 1/2 in. diameter x 5 in.	38.1 mm x 127 mm	5 ft	1.5 m	Fast response capillary	Fast response model, Includes 131524A duct bulb holder
T675A1771	55 F to 175 F	13 C to 79 C	200 F	93 C	1 F fixed	0.6 C fixed	1 1/2 in. diameter x 5 in.	38.1 mm x 127 mm	5 ft	1.5 m	Fast response capillary	Fast response model, Includes 131524A duct bulb holder
T675A1854	10 F to 110 F	-12 C to 43 C	125 F	52 C	1 F fixed	0.6 C fixed	1 1/2 in. diameter x 5 in.	38.1 mm x 127 mm	5 ft	1.5 m	Fast response capillary	Fast response model
T675B1002	30 F to 50 F	-1 C to 10 C	125 F	52 C	Manual Reset	Manual Reset	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	10 ft.	3 m	Copper bulb	—
T675B1010	30 F to 50 F	-1 C to 10 C	125 F	52 C	Manual Reset	Manual Reset	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	20 ft.	6.1 m	Copper bulb	—
T675B1028	-20 F to 50 F	-29 C to 10 C	125 F	52 C	Manual Reset	Manual Reset	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	10 ft.	3 m	Copper bulb	—
T678A1015	0 F to 100 F	-18 C to 38 C	125 F	52 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	20 ft.	6.1 m	Copper bulb	—
T678A1080	160 F to 260 F	71 C to 127 C	280 F	138 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	5 ft	1.5 m	Copper bulb	—
T678A1163	5 F to 95 F	-15 C to 35 C	125 F	52 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	20 ft.	6.1 m	Copper bulb	Celsius model
T678A1361	55 F to 175 F	13 C to 79 C	200 F	93 C	Interstage: 3.6 F to 12 F adjustable Switch: 3.6 F fixed	Interstage: 2.0 C to 6.7 C adjustable Switch: 2.0 C fixed	1/2 in. x 3 9/16 in.	13 mm x 90 mm	20 ft.	6.1 m	Copper bulb	—
* T678A1437	0 F to 100 F	-18 C to 38 C	125 F	52 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	5 ft	1.5 m	Copper bulb	
* T678A1445	55 F to 175 F	13 C to 79 C	200 F	93 C	Interstage: 3.6 F to 12 F adjustable Switch: 3.6 F fixed	Interstage: 2.0 C to 6.7 C adjustable Switch: 2.0 C fixed	1/2 in. x 3 9/16 in.	13 mm x 90 mm	5 ft	1.5 m	Copper bulb	
* TRADELINE models • SUPER TRADELINE models												

Temperature Controllers

Product Number	Setpoint Temperature Range		Maximum Operating Temperature		Differential Temperature		Bulb Size		Capillary Length		Sensor Element	Comments
	(F)	(C)	(F)	(C)	(F)	(C)	(inch)	(mm)	(ft)	(m)		
* T678A1478	0 F to 100 F	-18 C to 38 C	125 F	52 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	5 ft	1.5 m	Fast response capillary	Fast response model
* T678A1494	55 F to 175 F	13 C to 79 C	200 F	93 C	Interstage: 3.6 F to 12 F adjustable Switch: 3.6 F fixed	Interstage: 2.0 C to 6.7 C adjustable Switch: 2.0 C fixed	1/2 in. x 3 9/16 in.	13 mm x 90 mm	5 ft	1.5 m	Fast response capillary	Fast response model
T678A1627	0 F to 100 F	-18 C to 38 C	125 F	52 C	Interstage: 3.6 F to 12 F adjustable Switch: 3.6 F fixed	Interstage: 2.0 C to 6.7 C adjustable Switch: 2.0 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	10 ft.	3 m	Averaging capillary	Temperature rises 10 F above setpoint before resetting
T678A1700	0 F to 100 F	-18 C to 38 C	125 F	52 C	Interstage: 3 F to 10 F adjustable Switch: 3 F fixed	Interstage: 1.7 C to 5.6 C adjustable Switch: 1.7 C fixed	1/2 in. x 4 3/16 in.	13 mm dia., 106 mm long	5 ft	1.5 m	Copper bulb	Trol-A-Temp Special
* TRADELINE models • SUPER TRADELINE models												

T675F Crop-Trol Controller



Used to control an oil burning, portable crop dryer.

- Suitable for line-voltage, low-voltage or millivolt (Powerpile) switching.
- Mounts directly on dryer with sensing bulb in discharge air duct.
- Knob extends through case for manual control point adjustment.

- Differential setting wheel, located under cover, adjusts difference between cut-in and cut-out temperatures.

Application: Crop-trol, provides control of portable crop drying equipment.

Type: Remote bulb

Number of Sensors: 1

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: Component Listed

Contact Ratings:

120 Vac	240 Vac	277 Vac
8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR	4.2 AFL, 25.2 ALR

Replacement Parts:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

112622AA Well Assembly, 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper

112630AA Well Assembly, 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper

311266D Bulb Holder Assembly, T4031, use with copper elements only

7617ABY Compression Fitting, brass 1/2 in. NPT plug

Product Number	Setpoint Temperature Range		Maximum Operating Temperature		Differential Temperature		Bulb Size		Capillary Length		Sensor Element	Output
	(F)	(C)	(F)	(C)	(F)	(C)	(inch)	(mm)	(ft)	(m)		
T675F1032	80 F to 220 F	27 C to 104 C	245 F	118 C	5 F to 30 F	2.8 C to 17 C	3/8 in. x 3 in.	10 mm x 76 mm	10 ft.	3 m	Copper bulb	1 Spdt
* TRADELINE models • SUPER TRADELINE models												

Temperature Controllers

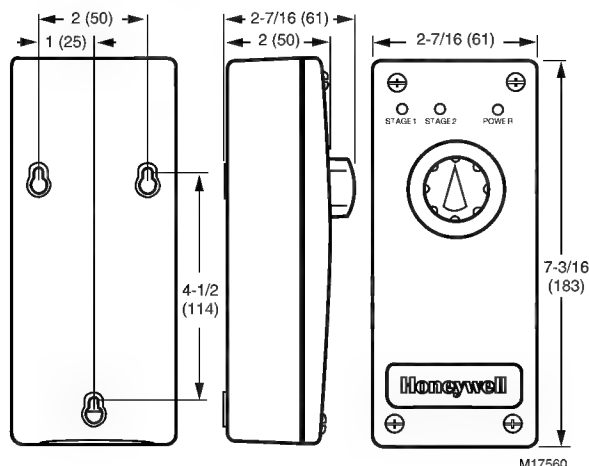
T7079 Solid State Remote Temperature Controller



The T7079 Electronic Remote Sensor Temperature Controller is capable of providing on-off temperature control for ducts, tanks, heating and refrigeration units, greenhouses, animal confinement buildings and other applications where electronic accuracy in addition to remote sensing is desired.

- Switch selection of heat or cool mode.
- Temperature sensing up to 400 feet.
- Does not require field calibration.
- 10K NTC temperature sensor.
- Wide setpoint temperature range.
- LED annunciation for both power on and relay state.
- Dual setpoint scale (F and C).
- Isolation transformer for 24 Vac input.
- Single- or Dual-stage output.
- Dual-stage output models can be configured as two-heat, two-cool, or one-heat/one-cool.

Dimension Diagram



Application: Heat or Cool

Accuracy: ± 2 F (± 3.6 C)

Ambient Temperature Range: -40 F to +140 F (-40 C to +60 C)

Maximum Distance to Sensor: 400 ft (122 m)

Number of Sensors: 1

Throttling Range: 1 F to 30 F (-17 C to 1 C)

Voltage: 24 Vac

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: Component Listed

Contact Ratings:

24 Vac	120 Vac	240 Vac
8.0 A resistive	9.8 AFL, 58.8 ALR, 125 VA Pilot Duty	4.9 AFL, 29.4 ALR, 125 VA Pilot Duty

Accessories:

32004800-001 10K sensor for use with T7079

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

Replacement Parts:

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

Product Number	Maximum Operating Temperature		Setpoint Temperature Range		Sensor Element	Comments	Includes
	(F)	(C)	(F)	(C)			
T7079A1004	-40 F to 140 F	-40 C to 60 C	-25 F to 105 F	-32 C to 40 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079A1012	-40 F to 140 F	-40 C to 60 C	100 F to 240 F	38 C to 116 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079A1046	-40 F to 140 F	-40 C to 60 C	-25 F to 105 F	-32 C to 40 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079A1053	-40 F to 140 F	-40 C to 60 C	100 F to 240 F	38 C to 116 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)

* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

Product Number	Maximum Operating Temperature		Setpoint Temperature Range		Sensor Element	Comments	Includes
	(F)	(C)	(F)	(C)			
T7079B1028	-40 F to 140 F	-40 C to 60 C	-25 F to 105 F	-32 C to 40 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079B1036	-40 F to 140 F	-40 C to 60 C	100 F to 240 F	38 C to 116 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079B1044	-40 F to 140 F	-40 C to 60 C	-25 F to 105 F	-32 C to 40 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
T7079B1051	-40 F to 140 F	-40 C to 60 C	100 F to 240 F	38 C to 116 C	10k @ 25 C NTC sensing element	Optional Accessories: 107048 Heat Conduction Compound, 4 ounces, 107324A Bulb Holder (for duct insertion), 121371A Copper Immersion Well, 121371E Stainless Steel Well, 32004800-001 10K NTC Sensor, T7047C1090 Wall Mounted Sensor Case.	10K ohm NTC Sensor (32004800-001)
* TRADELINE models • SUPER TRADELINE models							

Temperature Controllers

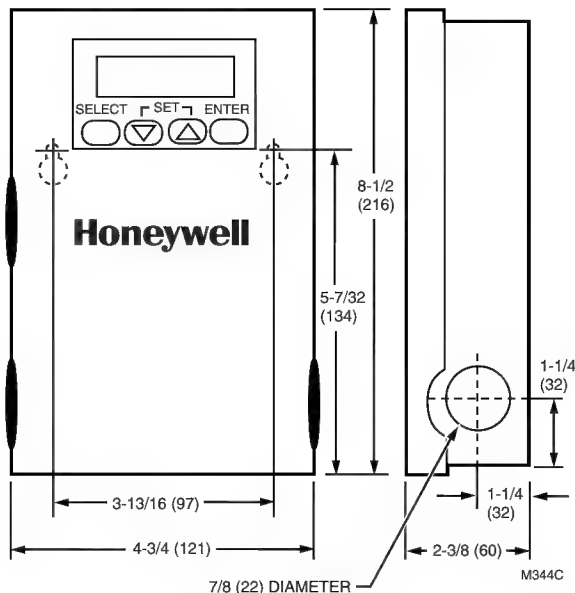
T775 Electronic Remote Temperature Controllers



The T775 family of electronic remote temperature controllers provide on/off, modulating, or reset control in applications where electronic accuracy in addition to remote sensing is desired.

- Available with one or two temperature inputs and up to four spdt relay output stages or modulating (electronic Series 90, 4-20 mA or 0-18 Vdc) outputs.
- Typical applications include: on/off control of fans, motors and heaters. proportional and floating control of damper and valve actuators. outdoor reset of heating and cooling systems.
- Electronic control accuracy.
- Linear platinum temperature sensor.
- LCD display indicates mode and output status; jumper switch provides field selection of F or C display.
- Keypad allows precise temperature selection; easy one-finger programming.
- Remote sensing from up to 1000 ft. (304m).
- Wide temperature setting range.
- Adjustable differential and throttling range.
- Heating and cooling stages independently programmable.
- Available with NEMA 4X enclosure.
- Optional No. 203531A Panel Mounting Kit allows mounting in an electrical panel.
- Available Application Guide, form no. 63-1197, offer answers to common application questions.

Dimension Diagram



Accuracy: ± 1 F at 77 F (± 0.5 C at 25 C)

Maximum Distance to Sensor: up to 1000 ft. (up to 304 m.)

Sensor Element: Platinum Sensor

Frequency: 50 Hz, 60 Hz

Approvals:

Canadian Standards Association: Certified: File No. LR95329

Underwriters Laboratories, Inc: File E4436, Vol. 19, Sec. 1, Guide XAPX

Contact Ratings:

24 Vac	120 Vac	240 Vac
10.0 A resistive	9.8 AFL, 58.8 ALR, 125 VA Pilot Duty	4.9 AFL, 29.4 ALR, 125 VA Pilot Duty

Accessories:

107323A Remote Bulb Shield Assembly, 3/8 in. diameter bulbs, < 5 in. long

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

193987GA Encapsulated platinum sensing element used with the T7075 and T775. 2 5/8 in long, 3/8 in diameter, 6 in. leads.

198212CA Encapsulated platinum sensing element used with the T7075 and T775. Water resistant, 60 in. leads.

203401B Encapsulated platinum PT3000 sensing element used with the T7075 and T775. Water tight, 20 in. leads, requires 1/2 in. diameter well.

Replacement Parts:

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm).

Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

Application: On/off control for applications where electronic accuracy and remote sensing is required

Type: Electronic remote bulb

Product Number	Ambient Temperature Range		Differential Temperature		Setpoint Temperature Range		Number of Sensors	Analog Output	Output	Comments	Includes
	(F)	(C)	(F)	(C)	(F)	(C)					
T775A1001	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	—	1 Spdt	—	193987GA (1)
T775A1019	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	—	2 Spdt	—	193987GA (1)
T775A1027	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	—	3 spdt	—	193987GA (1)
T775A1035	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	—	4 spdt	—	193987GA (1)

* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

Product Number	Ambient Temperature Range		Differential Temperature		Setpoint Temperature Range		Number of Sensors	Analog Output	Output	Comments	Includes
	(F)	(C)	(F)	(C)	(F)	(C)					
T775B1000	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	2 Spdt	—	193987GA (2)
T775B1018	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	3 spdt	—	193987GA (2)
T775B1026	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	4 spdt	—	193987GA (2)
T775C1009	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	—	4 spdt	NEMA 4X Enclosure	198212CA (1), NEMA 4X
T775D1008	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	4 spdt	NEMA 4X Enclosure	203401B (2), NEMA 4X
T775E1015	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	Electronic Series 90	1 Spdt	—	193987GA (1)
T775E1023	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	Electronic Series 90	2 Spdt	—	193987GA (1)
T775E1056	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	4-20 mA	1 Spdt	—	193987GA (1)
T775E1064	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	4-20 mA	2 Spdt	—	193987GA (1)
T775E1098	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	0-18 Vdc	1 Spdt	—	193987GA (1)
* T775E1114	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	0-18 Vdc	3 spdt	—	193987GA (1)
T775F1022	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	Electronic Series 90	3 spdt	—	193987GA (2)
T775F1055	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	4-20 mA	3 spdt	—	193987GA (2)
T775F1089	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	0-18 Vdc	3 spdt	—	193987GA (2)
T775G1005	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	Electronic Series 90	3 spdt	NEMA 4X Enclosure	198212CA (1), NEMA 4X
T775G1013	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	4-20 mA	3 spdt	NEMA 4X Enclosure	198212CA (1), NEMA 4X
T775G1021	-40 F to +125 F	-40 C to +52 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	1	0-18 Vdc	3 spdt	NEMA 4X Enclosure	198212CA (1), NEMA 4X
T775J1001	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	1 Spdt	—	193987GA (2)
T775J1019	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	Electronic Series 90	—	—	193987GA (2)
T775J1027	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	4-20 mA	—	—	193987GA (2)
T775J1035	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	0-18 Vdc	—	—	193987GA (2)
T775J1043	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	Electronic Series 90	1 Spdt	—	193987GA (2)
T775J1050	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	4-20 mA	1 Spdt	—	193987GA (2)
T775J1068	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	0-18 Vdc	1 Spdt	—	193987GA (2)
T775J1076	-40 F to +140 F	-40 C to +60 C	1F to 35F	0.6C to 19C	-40 F to 220 F	-40 C to 105 C	2	—	2 Spdt	—	193987GA (2)

* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

T915 Proportional Temperature Controller



Proportional remote bulb controllers for ducts, tanks, boilers, pipes and other heat exchangers.

- Provide proportioning control of three-wire, low-voltage valve or damper motors.
- Used to regulate temperatures of either air or liquids.
- All models ambient compensated.
- Ambient temperature compensation provides good temperature control. Refer to T775 Electronic Remote Temperature Controller where more exact control is required and/or remote controller location is preferred.
- Temperature setting scale markings in both Fahrenheit and Celsius.
- Steel case has a clear plastic cover to make setting readily visible.
- Surface mount using two screws through back of case.

Application: Used with Series 90 Modutrol Motors for proportional control of valves and dampers

Type: Remote bulb

Color: Gray

Number of Sensors: 1

Throttling Range: 3 F (1.7 C)

Accessories:

311266D Bulb Holder Assembly., T4031, use with copper elements only

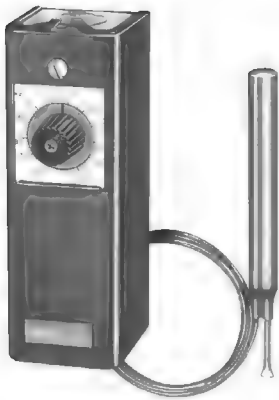
Replacement Parts:

33312B Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.

Product Number	Bulb Size		Capillary Length		Maximum Operating Temperature		Setpoint Temperature Range		Sensor Element	Analog Output	Output
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)			
T915A1177	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	5 ft	1.5 m	200 F	93 C	15 F to 90 F	-10 C to 32 C	Copper bulb, fade-out fill	One 135 Ohm Potentiometer	—
T915B1002	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	Two 135 Ohm Potentiometers	—
T915C1407	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	20 ft.	6.1 m	200 F	93 C	15 F to 90 F	-10 C to 32 C	Copper bulb, fade-out fill	One 135 Ohm Potentiometer	—
T915C1449	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	One 280 Ohm Potentiometer	—
T915C1928	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	5 ft	1.5 m	230 F	110 C	80 F to 210 F	27 C to 99 C	Copper bulb, high temperature fill	One 135 Ohm Potentiometer	—
T915C1936	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	20 ft.	6.1 m	230 F	110 C	80 F to 210 F	27 C to 99 C	Copper bulb, high temperature fill	One 135 Ohm Potentiometer	—
T915D1083	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	Two 135 Ohm Potentiometers	—
T915D1091	11/16 in. diameter, 17 1/2 in. long	17 mm diameter, 445 mm long	20 ft.	6.1 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	Two 135 Ohm Potentiometers	—
T915D1273	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	5 ft	1.5 m	240 F	116 C	105 F to 220 F	40 C to 104 C	Copper bulb, high temperature fill	Two 135 Ohm Potentiometers	—
T915F1008	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	Two 135 Ohm Potentiometers	—
T915F1016	11/16 in. diameter, 17 1/2 in. long	17 mm diameter, 445 mm long	20 ft.	6.1 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	Two 135 Ohm Potentiometers	—
T915M1018	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	One 135 Ohm Potentiometer	1 Spdt
T915M1216	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	5 ft	1.5 m	240 F	116 C	105 F to 220 F	40 C to 104 C	Copper bulb, high temperature fill	One 135 Ohm Potentiometer	1 Spdt
T915P1007	11/16 in. diameter, 14 1/2 in. long	17 mm diameter, 368 mm long	5 ft	1.5 m	130 F	54 C	15 F to 90 F	-10 C to 32 C	Copper bulb, cross ambient fill	One 135 Ohm Potentiometer	1 Spdt

* TRADELINE models • SUPER TRADELINE models

T991A Proportional Temperature Controller



Application: Provide modulating control of water or air temperature in ducts or tanks

Type: Remote bulb

Color: Gray

Number of Sensors: 1

Throttling Range: 3 F to 30 F (1.7 C to 16.7 C)

Frequency: 50 Hz, 60 Hz

Replacement Parts:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long
112620AA Well Assembly, 3 3/4 in. (95 mm) insertion, 3/8 in. (10 mm) diameter, copper

112620BB Well Assembly, 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, copper

112620CB Well Assembly, 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, copper

112622AA Well Assembly, 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper

112624AA Well Assembly, 4 3/4 in. (121 mm) insertion, 1/2 in. (13 mm) diameter, stainless steel

112628AA Well Assembly, 4 3/4 in. (121 mm) insertion, 1/2 in. (13 mm) diameter, stainless steel

112630AA Well Assembly, 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper

112634AA Well Assembly, 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper

For modulating control of water or air temperature in ducts, tanks and similar applications

- Fast response models (for duct mounting) have coiled sensing element giving at least four times faster response than standard models.
- Ambient temperature compensated for the case and tubing.
- Sensing element capillary tubing allows remote mounting of sensing element.
- Setpoint may be read and adjusted through cover.
- Throttling dial inside case adjusts proportional throttling range.

114509AA Well Assembly, 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, stainless steel

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

121371B Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

121371L Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp.

121371M Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.

123869A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.

123870A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.

123872A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT.

124299AA Copper. Bulb size: 3/8 in. (10 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes set screw with spud for armored capillary with plug.

7617ABY Compression Fitting, brass 1/2 in. NPT plug

7640HX Mounting Kit, controller and averaging element

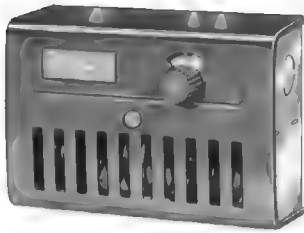
Product Number	Bulb Size		Capillary Length		Maximum Operating Temperature		Setpoint Temperature Range		Sensor Element	Analog Output	Comments
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)			
T991A1004	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1012	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	20 ft.	6.1 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1061	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	280 F	138 C	160 F to 260 F	71 C to 127 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1079	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	20 ft.	6.1 m	280 F	138 C	160 F to 260 F	71 C to 127 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1095	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	125 F	52 C	5 F to 95 F	-15 C to 35 C	Copper bulb	One 135 Ohm Potentiometer	Celsius scale
T991A1186	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1194	1/2 in. diameter, 3 9/16 in. long	13 mm diameter, 90 mm long	20 ft.	6.1 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A1210	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	200 F	93 C	59 F to 167 F	15 C to 75 C	Copper bulb	One 135 Ohm Potentiometer	—

* TRADELINE models • SUPER TRADELINE models

Temperature Controllers

Product Number	Bulb Size		Capillary Length		Maximum Operating Temperature		Setpoint Temperature Range		Sensor Element	Analog Output	Comments
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)			
* T991A1244	1/2 in. diameter, 3 9/16 in. long	13 mm diameter, 90 mm long	5 ft	1.5 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper bulb	One 135 Ohm Potentiometer	Includes 107324A duct bulb holder
* T991A1269	1/2 in. diameter, 3 9/16 in. long	13 mm diameter, 90 mm long	20 ft.	6.1 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper bulb	One 280 Ohm Potentiometer	280 ohm
* T991A1343	1/2 in. diameter, 3 9/16 in. long	13 mm diameter, 90 mm long	5 ft	1.5 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper bulb	One 280 Ohm Potentiometer	280 ohm, includes 107324A duct bulb holder
* T991A1350	7/64 in. diameter, 24 ft. long	2.8 mm diameter, 7.3 m long	24 ft.	7.3 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper averaging element	One 135 Ohm Potentiometer	—
* T991A1426	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper bulb	One 135 Ohm Potentiometer	Includes 107324A duct bulb holder
* T991A1715	1/8 in. diameter, 76.4 in. long	3 mm diameter, 1.9 m long	5 ft	1.5 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper fast response element	One 135 Ohm Potentiometer	Includes 131524A duct coil holder
* T991A1731	1/8 in. diameter, 82.1 in. long	3 mm diameter, 2.1 m long	5 ft	1.5 m	280 F	138 C	160 F to 260 F	71 C to 127 C	Copper fast response element	One 135 Ohm Potentiometer	Includes 131524A duct coil holder
T991A1756	1/8 in. diameter, 76.4 in. long	3 mm diameter, 1.9 m long	5 ft	1.5 m	200 F	93 C	55 F to 175 F	13 C to 79 C	Copper fast response element	One 135 Ohm Potentiometer	Includes 131524A duct coil holder
T991A1764	7/64 in. diameter, 24 ft. long	2.8 mm diameter, 7.3 m long	24 ft.	7.3 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper averaging element	One 135 Ohm Potentiometer	—
T991A2044	3/8 in. diameter, 3 1/2 in. long	10 mm diameter, 89 mm long	5 ft	1.5 m	130 F	54 C	-30 F to 70 F	-34 C to 21 C	Copper bulb	One 135 Ohm Potentiometer	—
T991A2069	1/8 in. diameter, 76.4 in. long	3 mm diameter, 1.9 m long	20 ft.	6.1 m	125 F	52 C	0 F to 100 F	-18 C to 38 C	Copper fast response element	One 135 Ohm Potentiometer	Includes 131524A duct coil holder
* TRADELINE models • SUPER TRADELINE models											

T631A,B,C Farm Controllers



Provide line voltage control of heating, cooling and ventilating systems in farm buildings or storage areas.

- Use in barns, poultry houses, hog barns, pump houses, milk houses and crop storage houses.
- Treated to resist corrosion.
- Slots in front and bottom of case provide maximum air circulation over the coiled sensing element.
- Spdt snap switches permanently sealed against corrosion.
- Easy mounting using screws through holes in back of case.

Dimensions, Approximate: 4-5/16 in. high, 6-1/16 in. wide, 2-7/8 in. deep (110 mm high, 154 mm wide, 73 mm deep)

Type: Agricultural Temperature Controller

Ambient Temperature Ratings: 120 F (49 C)

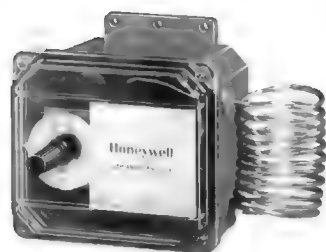
Sensor Element: Coiled Copper Tube

Product Number	Temperature Range		Differential Temperature		Interstage Differential Temperature		Output	Current	Comments
	(F)	(C)	(F)	(C)	(F)	(C)			
T631A1006	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Red finish
T631A1022	70 F to 140 F	20 C to 60 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Red finish
T631A1030	0 to 70 F	-18 C to +21 C	3.0 F	1.7 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Red finish
T631A1063	-10 F to +100 F	-23 C to +38 C	3.0 F	1.7 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Red finish
T631A1113	35 F to 100 F	2 C to 38 C	3.5 F	1.9 C	—	—	1 Spdt (1 hp at 0.7 kW)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	Red finish
T631A1154	32 F to 104 F	0 C to 40 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Scale in Celsius, Red finish
T631B1005	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	3.5 F	1.9 C	2 Spdt	7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Red finish
T631B1054	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	adjustable (0 F to 7 F)	adjustable (0 C to 4 C)	2 Spdt (1 hp at 0.7 kW)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	Red finish
T631C1012	20 F to 90 F	-7 C to +32 C	3.0 F	1.7 C	—	—	1 Spdt (1 hp at 0.7 kW)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	Gray finish
T631C1020	70 F to 140 F	21 C to 66 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Gray finish
T631C1038	14 F to 86 F	-10 C to +30 C	3.0 F	1.7 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Scale in Celsius, Gray finish
T631C1046	70 F to 140 F	20 C to 60 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Scale in Celsius, Gray finish
T631C1053	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	—	—	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	Gray finish
* T631C1103	-30 F to +100 F	-34 C to +38 C	5.0 F	2.8 C	—	—	1 Spdt (1 hp at 0.7 kW)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	Gray finish

* TRADELINE models • SUPER TRADELINE models

Controllers, Temperature—Agricultural

T631F,G NEMA IV Controllers



Provide line voltage control of heating, cooling and ventilating systems in farm buildings, storage areas and industrial environments; watertight, dust-proof enclosure.

- Use in barns, brooder houses, poultry houses, hog barns, pump houses, milk houses, crop storage houses and industrial environments.
- NEMA 4X enclosure protects thermostat and wiring connections from oil, water, dust, and corrosion.
- Clear plastic cover reveals setpoint, discourages tampering.
- Sensing element externally mounted for fast response and tin plated to resist corrosion.
- Reliable snap switches sealed against contamination.
- Insulated case has internal grounding screw for safety.
- Meet National Electrical Code Article 547-4 requirements.
- Easy mounting with screws through holes in flanges on case.

Dimensions, Approximate: 5 in. high, 6-1/2 in. wide, 3 in. deep
(127 mm high, 165 mm wide, 76 mm deep)

Type: Agricultural Temperature Controller

Ambient Temperature Ratings: 145 F

Sensor Element: Coiled, Tin-plated Copper Tube

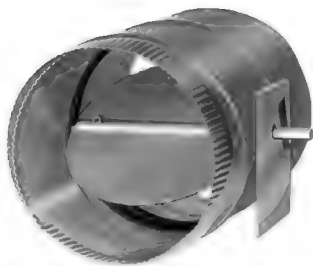
Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E-O

Product Number	Temperature Range		Differential Temperature		Interstage Differential Temperature		Output	Current	Comments
	(F)	(C)	(F)	(C)	(F)	(C)			
T631F1068	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	adjustable (0 F to 7 F)	adjustable (0 C to 4 C)	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	NEMA 4X Housing
T631F1084	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	adjustable (0 F to 7 F)	adjustable (0 C to 4 C)	1 Spdt	2.0 A AFL @ 24 Vac, 7.4 AFL & 44.4 ALR @ 120 Vac, 3.7 AFL & 22.2 ALR @ 240 Vac	NEMA 4X Housing
T631F1092	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	adjustable (0 F to 7 F)	adjustable (0 C to 4 C)	1 Spdt (1 hp)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	NEMA 4X Housing
T631G1059	35 F to 100 F	2 C to 38 C	2.0 F	1.1 C	adjustable (0 F to 7 F)	adjustable (0 C to 4 C)	2 Spdt (1 hp)	16 AFL & 96 ALR @ 120 Vac, 8 AFL & 48 ALR @ 240 Vac	NEMA 4X Housing

* TRADELINE models • SUPER TRADELINE models

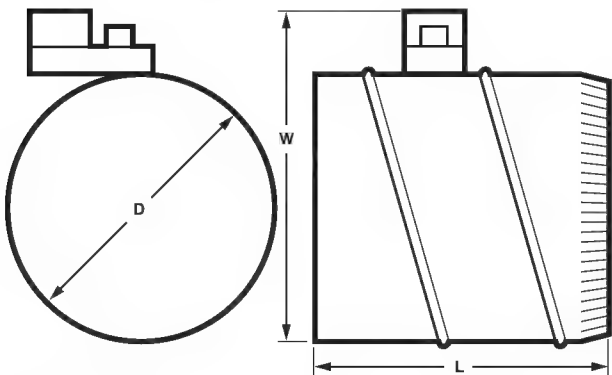
D690 Low-Leakage, Single-Blade, Round Dampers



The D690 Round Damper is used in conventional air handling systems to control airflow in a round duct. The damper is designed for use with Honeywell ML6161 and ML7161 Direct Coupled Actuators.

- Neoprene seal for tight closing and low leakage.
- Oilite bearings for long life.
- 90 degree damper travel for a variety of applications.

Dimension Diagrams



Application Type: heating, cooling, ventilating
Maximum Approach Velocity (ft/min): 2500 ft/min
Temperature Range: 32 to 130 F (0 to 54 C)

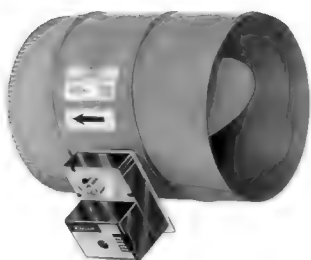
DAMPER DIAMETER (D)		WIDTH (W)		LENGTH (L)	
in.	mm	in.	mm	in.	mm
6	152	9-1/2	241	12	305
8	203	11-1/2	292	12	305
10	254	13-1/2	343	12	305
12	305	15-1/2	394	13	330
14	356	17-1/2	445	15	381
16	406	19-1/2	495	17	432

M17412

Product Number	Dimensions, Approximate		Type of Blade	Used With
	(inch)	(mm)		
* D690A1002	6 in diameter	152 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* D690A1010	8 in diameter	203 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* D690A1028	10 in diameter	254 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* D690A1036	12 in diameter	305 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* D690A1044	14 in diameter	356 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* D690A1051	16 in diameter	406 mm diameter	Single-blade, round	W7751 VAV Controller, ML7161, ML6161
* TRADELINE models • SUPER TRADELINE models				

Dampers, Round

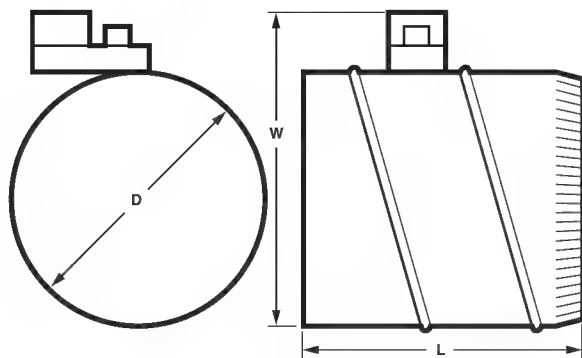
DM7600 Commercial Zone Damper



The DM7600 Commercial Zone Damper is used in zoning systems to control airflow in a round duct. A Honeywell ML6161 or ML7161 Direct Coupled Actuator is factory mounted to the damper to simplify field installation.

- Neoprene seal for tight closing and low leakage.
- Oilite bearings for long life.
- 90 degree damper travel for a variety of applications.
- Magnetic coupling requires no limit switches or mechanical stops.

Dimension Diagrams



Application Type: heating, cooling, ventilating

Temperature Range: 32 to 130 F (0 to 54 C)

Voltage (Vac): 24 Vac

Frequency: 50 Hz, 60 Hz

Maximum Approach Velocity (ft/min): 2500 ft/min

Torque: 35 lb-in.

DAMPER DIAMETER (D)		WIDTH (W)		LENGTH (L)	
in.	mm	in.	mm	in.	mm
6	152	9-1/2	241	12	305
8	203	11-1/2	292	12	305
10	254	13-1/2	343	12	305
12	305	15-1/2	394	13	330
14	356	17-1/2	445	15	381
16	406	19-1/2	495	17	432

M17412

Product Number	Integral Actuator	Dimensions, Approximate		Input Signal	Timing	Type of Blade
		(inch)	(mm)			
DM7600A1005	ML7161A2008	6 in diameter	152 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600A1013	ML7161A2008	8 in diameter	203 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600A1021	ML7161A2008	10 in diameter	254 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600A1039	ML7161A2008	12 in diameter	305 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600A1047	ML7161A2008	14 in diameter	356 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600A1054	ML7161A2008	16 in diameter	406 mm diameter	2 to 10 Vdc or 4 to 20 mA	90 sec	Single-blade, round
DM7600B1004	ML6161A2009	6 in diameter	152 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1012	ML6161A2009	8 in diameter	203 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1020	ML6161A2009	10 in diameter	254 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1038	ML6161A2009	12 in diameter	305 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1046	ML6161A2009	14 in diameter	356 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1053	ML6161A2009	16 in diameter	406 mm diameter	Spdt floating	90 sec	Single-blade, round
DM7600B1061	ML6161A2017	6 in diameter	152 mm diameter	Spdt floating	7 min	Single-blade, round
DM7600B1079	ML6161A2017	8 in diameter	203 mm diameter	Spdt floating	7 min	Single-blade, round
DM7600B1087	ML6161A2017	10 in diameter	254 mm diameter	Spdt floating	7 min	Single-blade, round
DM7600B1095	ML6161A2017	12 in diameter	305 mm diameter	Spdt floating	7 min	Single-blade, round
DM7600B1103	ML6161A2017	14 in diameter	356 mm diameter	Spdt floating	7 min	Single-blade, round
DM7600B1111	ML6161A2017	16 in diameter	406 mm diameter	Spdt floating	7 min	Single-blade, round

* TRADELINE models • SUPER TRADELINE models

D640 and D642 Series Rectangular Volume Control Dampers



The D640, D642 Control Dampers are ruggedly built with 3-V style blades for application as automatic control or manual balancing dampers in low to medium pressure and velocity systems. A wide range of electric or pneumatic actuators are available for these models.

The D640 series is a general purpose damper intended for applications where low leakage performance is not necessary. The D642 series is an ultra low leakage control damper which includes blade and jamb seals.

- Standard frames utilize heavy-duty 5 in. x 1 in. 16 ga. galvanized steel hat channel frame, designed for installation inside ductwork. Reinforced corners. Low profile head and sill on dampers less than 17 in. high.
- Options: stainless steel and aluminum (14 and 12 gage galvanized steel only).
- Frame options are: single flange (either side of frame) or double flange (both sides of frame). See Fig. 2.
- Standard 3-V blades are fabricated from a single thickness of 16 ga. galvanized steel incorporating three longitudinal structural V-grooves (each running the full length of the blade). (See Fig. 1.) This blade has low to medium velocity and pressure capabilities.
- 1/2 in. diameter square plated steel axles positively locked to the blades eliminate slippage between blades and axles. Removable shaft extends 6 in. beyond frame. Optional stainless steel construction.
- Molded synthetic (acetal) bearings rotate in a polished extruded frame raceway. Extremely low friction and long operating life result from this advanced design. Bronze or stainless steel bearings are optional.
- Blade-to-blade linkage (for parallel or opposed blade action) is concealed within the frame.
- Linkage is engineered to accurately control each and every blade without need for adjustment. Plated steel construction ensures a long corrosion free life.
- D642 Only: Flexible metal compression-type jamb seals (between blade ends and side frames) and extruded vinyl blade seals (between blade edges) reduce leakage. Silicone, EPDM rubber blade seals, and flexible stainless steel jamb seals are optional.

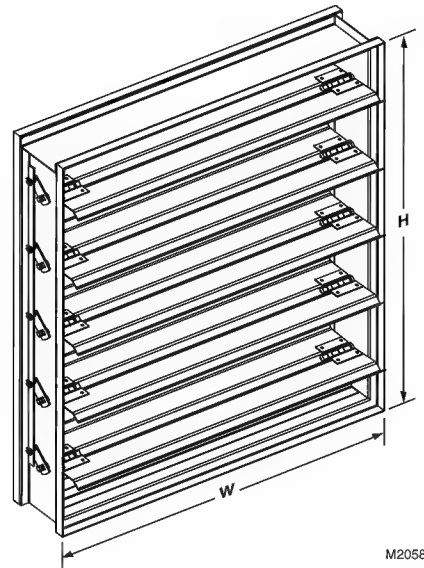
Size Range ¹	
Minimum Size	
One Blade	6 in. wide by 6 in. high
Two Blade	6 in. wide by 10 in. high
Maximum Size	
Single Section	48 in. wide by 72 in. high
Multiple Section	unlimited
Temperature Rating	180 F maximum
Standard Construction ²	
Blade:	16 gauge galvanized steel 3-V
Action:	Parallel or Opposed
Frame:	16 gauge galvanized steel Hat-channel
Bearings	Molded Acetal
Linkage	Galvanized Steel, internal frame
Axles	1/2 in. square plated steel
Jamb Seals ³	Compression-type Stainless Steel
Blade Edge Seals ³	Extruded Vinyl

¹ Width and height dimensions furnished 1/4 in. undersized - standard

² See table for customized options

³ D642 Dampers only

Dimensions

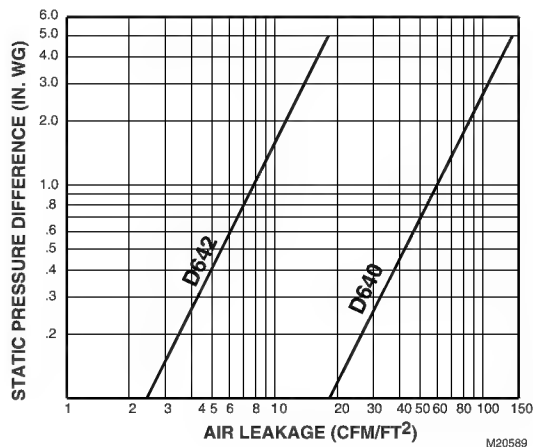


M20587

Dampers, Rectangular

Leakage Data

Leakage testing was conducted in accordance with AMCA Standard 500D and is expressed as cfm/sq ft of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/cubic ft.



Performance Data

D640, D642 Pressure and Velocity Limits.

Damper Size in inches	Maximum System Pressure	Maximum System Velocity
12 x 12	5.0 in. wg	3000 fpm
24 x 24	5.0 in. wg	3000 fpm
36 x 36	4.0 in. wg	2500 fpm
48 x 48	2.5 in. wg	2000 fpm

NOTE: D640 and D642 will withstand higher pressures and velocities. Displayed ratings are conservative to prevent misapplication. Consult Honeywell if you have an application outside these limitations.

Pressure Loss Coefficient.

	12x12	24x24	36x36	12x48	48x12
AMCA Figure 5.3	2.41	0.65	0.44	0.76	1.10
AMCA Figure 5.2	3.35	0.90	0.66	1.07	1.62
AMCA Figure 5.5	4.36	2.02	1.87	2.21	2.83

NOTE: Data is corrected to standard air density.

Pressure loss can be determined using the following:

$$\Delta p = C_o \times (V/4005)^2$$

where Δp = pressure drop (in. wg)
 C_o = pressure loss coefficient
 V = face velocity (fpm)

	Material			Frame Gauge			Blade Seals			Bearings			Axles		Linkage Materials		Flange			
<i>S = Standard O = Optional</i>	Galv	S/S	Al	16	14	12	Vinyl	Silicone	EPDM	Synthetic	Bronze	S/S	Steel	S/S	Steel	S/S	None	Single	Double	Reverse
D640 Standard Volume Control Damper	S	O	O	S	O	O	N/A	N/A	N/A	S	O	O	S	O	S	O	S	O	O	O
D642 Ultra-Low Leakage Volume Control Damper	S	O	O	S	O	O	S	O	O	S	O	O	S	O	S	O	S	O	O	O

Direct Coupled Actuators—Selection Guide

Direct Coupled Actuators Quick Selection Guide

Precise, reliable performance. Lasting value.

Ease of installation.

Everything you look for in direct coupled actuators hinges on quality. And quality engineering is what makes Honeywell's complete line of actuators the top performers in the industry. Our global engineering team designs and tests our direct-coupled actuators to exceed rigorous global standards—and to meet Honeywell's own demanding life testing.

But we don't stop there. Thanks to our continuous improvement process, Honeywell actuators are now easier than ever to install. You'll also benefit from consistent wiring regardless of signal type, common accessories, and a simplified selection process.

Honeywell's complete line of actuators and valves are already proven in more than three million buildings worldwide. So when you need spring or non-spring return actuators for your damper and valve applications, specify Honeywell. We make precision easy.

• Many mounting options

Self-centering shaft adapter provides mounting flexibility and greater clamping force

• Easier configuration and model selection

Signal mode switch adapts spring return models to floating or modulating applications

• Simplified wiring

Detachable access cover allows direct wiring without a junction box

• Easy installation

Common wiring for every signal saves installation time

• More control, highly accurate

200 reposition steps for modulating models provide precise control

Easy-to-Select Catalog Numbers:

S 20 24-2POS-SW2

Fail Safe Mode

- Spring
- Non-spring Return

Input Signal Type





- 24 Vac, Floating/On-Off
- 120 Vac, On-Off
- 230 Vac, On-Off
- 010 Modulating Models

Torque

- 05 Nm = 44 in-lb
- 10 Nm = 88 in-lb
- 20 Nm = 175 in-lb
- 34 Nm = 300 in-lb

Accessories/Specials

- 2POS - On-Off
- SW2 - Two Aux Switches
- SER - Adj. Zero & Span

		Torque	Voltage	Description	Catalog Number	Model Number
Spring Return		44 in-lb (5 Nm)	24 Vac	Two Position	S0524-2POS	MS8105A1008
			120 Vac	Two Position	S05120-2POS	MS8105A1002
			24 Vac	Floating & Modulating	S05010	MS7505A2008
	88 in-lb (10 Nm)	24 Vac	24 Vac	Two Position	S1024-2POS	MS8110A1008
				Two Position w/Auxiliary Switches	S1024-2POS-SW2	MS8110A1206
		120 Vac	120 Vac	Two Position	S10120-2POS	MS4110A1002
				Two Position w/Auxiliary Switches	S10120-2POS-SW2	MS4110A1200
		24 Vac	24 Vac	Floating & Modulating	S10010	MS7510A2208
				Floating and Modulating w/Auxiliary Switches	S10010-SW2	MS7510A2206
				Floating & Modulating w/Auxiliary Switches & Adjustable Zero & Span	S10010-SER-SW2	MS7510H2209
	175 in-lb (20 Nm)	24 Vac	24 Vac	Two Position	S2024-2POS	MS8120A1007
				Two Position w/Auxiliary Switches	S2024-2POS-SW2	MS8120A1205
		120 Vac	120 Vac	Two Position	S20120-2POS	MS4120A1001
				Two Position w/Auxiliary Switches	S20120-2POS-SW2	MS4120A1209
		24 Vac	24 Vac	Floating & Modulating	S20010	MS7520A2007
				Floating & Modulating w/Auxiliary Switches	S20010-SW2	MS7520A2205
				Floating and Modulating w/Auxiliary Switches & Adjustable Zero & Span	S20010-SER-SW2	MS7520H2208
Non-Spring Return		35 in-lb (4 Nm)	24 Vac	Two Position & Floating	ML6161B2024	ML6161B2024
				Modulating	ML7161A2008	ML7161A2008
		70 in-lb (8 Nm)	24 Vac	Two Position & Floating	ML6174B2019	ML6174B2019
				Modulating	ML7174A2001	ML7174A2001
		175 in-lb (20 Nm)	24 Vac	Two Position & Floating	N2024	MN6120A1002
				Two Position & Floating w/Auxiliary Switches	N024-SW2	MN6120A1200
				Modulating	N20010	MN7220A2007
				Modulating w/Auxiliary Switches	N20010-SW2	MN7220A2205
		300 in-lb (34 Nm)	24 Vac	Two Position & Floating	N3424	MN6134A1003
				Modulating	N34010	MN7234A2008

Damper Actuators, Direct Coupled

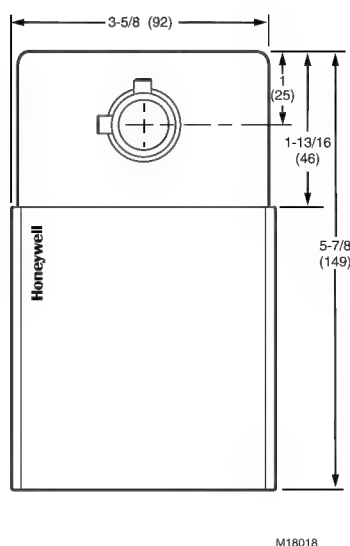
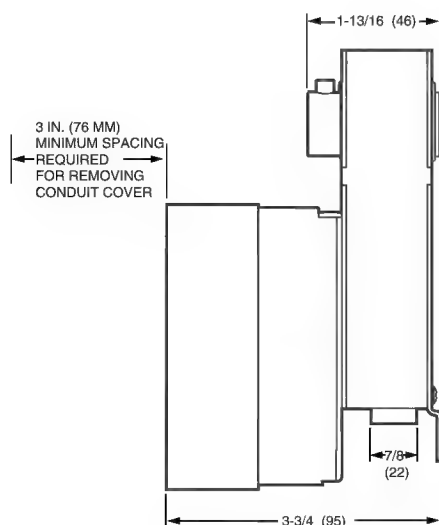
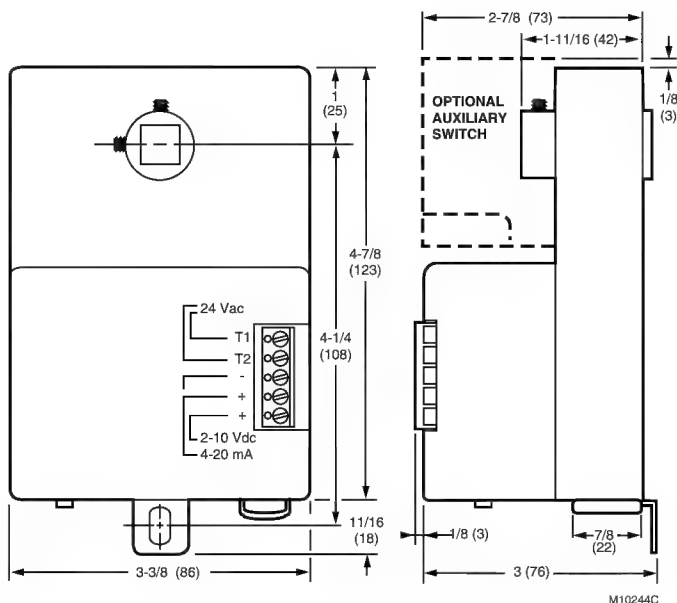
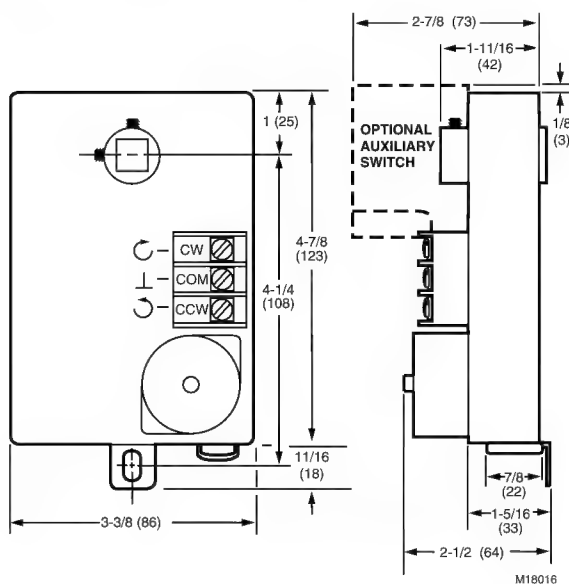
ML6161; ML7161 Non-Spring Return Direct Coupled Damper Actuators



Used to control dampers in applications such as variable air volume (VAV) terminal units and for mounting on ball valves; suitable for use with SPDT or floating thermostats or building automation controls.

- Control for air damper applications with up to 10 sq ft assuming 3.5 lb-in. per sq ft of damper area, velocity independent
- Superior A/C synchronous submotor for consistent timing and actuator longevity.
- Eliminate need for limit switches or mechanical stops by providing magnetic coupling.
- All models include manual declutch lever, and bag assembly with two minimum position setscrews.
- Mount on 3/8 inch or 1/2 inch square or round damper shaft.
- Selectable 45, 60, and 90 degree stroke in either clockwise or counterclockwise direction.

Dimension Diagrams



Damper Actuators, Direct Coupled

Electrical Connections: Screw terminals

Environmental Rating: NEMA1

Fail Safe Mode: Non-Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1/2 square/round (10 to 13 square/round)

External Auxiliary Switches Available: Yes, 201052B

Materials: Steel plate and Plenum rated plastic

Manual Operation: Declutch Mechanism

Mounting Method: Rotational Stroke: 90 degrees

Ambient Temperature Range: 20 F to +125 F (-18 C to +50 C)

Storage Temperature Range: 20 F to +130 F (-18 C to +54 C)

Frequency: 50 Hz, 60 Hz

Includes: 4074ENY Bag Assembly

Rotational Stroke Adjustment: Mechanically limited at 45 or 60 degrees in cw or ccw directions

Maximum Noise Rating, Driving (dBA @ 1m): 45

Shaft Adapter Type: Aluminum Hub, two set screws

Weight: 1.5 lb (0.68 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

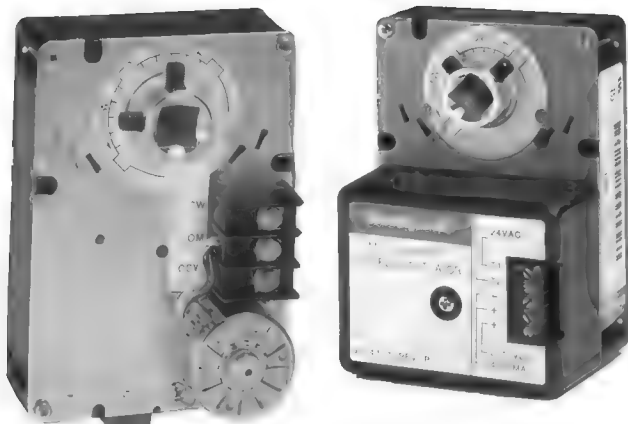
C-Tick: N314

Product Number	Rated Torque		Maximum Stall Torque		Timing, Nominal Driving @ 60 Hz (seconds)	Supply Voltage	Control Signal	Feedback	Input Impedance	Power Consumption		Comments
	(lb-in.)	(Nm)	(lb-in.)	(Nm)						Driving		
* ML6161A2009	35	4	70	8	90	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		—
ML6161A2017	35	4	70	8	420	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		—
* ML6161A2025	35	4	70	8	180	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		—
* ML6161B2024	35	4	70	8	90	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		—
* ML6161B2032	35	4	70	8	420	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		—
* ML6161B2073	35	4	70	8	180	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		—
ML6161C2007	35	4	70	8	90	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML6161C2015	35	4	70	8	420	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML6161C2023	35	4	70	8	180	24 Vac +/-20%	Floating, SPDT	With accessory	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML6161D2006	35	4	70	8	90	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
* ML6161D2014	35	4	70	8	420	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
* ML6161D2022	35	4	70	8	180	24 Vac +/-20%	Floating, SPDT	—	—	1.8 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML7161A2008	35	4	70	8	90	24 Vac +/-20%	2-10 Vdc, 4-20 mA	—	45K ohm (2-10 Vdc signal), 536 ohm (4-20 mA signal)	4.8 VA		—

* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

ML6174; ML7174 Non-Spring Return Direct Coupled Damper Actuators



Used to control dampers in applications such as variable air volume (VAV) terminal units and for mounting on ball valves; suitable for use with SPDT or floating thermostats or building automation controls.

- Control for air damper applications with up to 20 sq ft assuming 3.5 lb-in. per sq ft of damper area, velocity independent.
- Magnetic coupling eliminates the need for mechanical stops or limit switch adjustments by limiting stall torque to 130 lb-in. maximum.
- Mount directly on 3/8 to 1/2 in. round and square damper shafts.
- All models include manual declutch lever for ease of mounting, and bag assembly with two minimum position setscrews.
- 90 second timing models are suitable for use with pressure independent VAV systems.
- Selectable 45, 60, and 90 degree stroke in either clockwise or counterclockwise direction.

Dimension Diagrams

See Diagrams on page 400

Electrical Connections: Screw terminals

Environmental Rating: NEMA1

Fail Safe Mode: Non-Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1/2 square/round (10 to 13 square/round)

External Auxiliary Switches Available: Yes, 201052B

Materials: Steel plate and Plenum rated plastic

Manual Operation: Declutch Mechanism

Mounting Method: Rotational Stroke: 90 degrees

Ambient Temperature Range: 20 F to +125 F (-18 C to +50 C)

Storage Temperature Range: 20 F to +130 F (-18 C to +54 C)

Frequency: 50 Hz, 60 Hz

Rotational Stroke Adjustment: Mechanically limited at 45 or 60 degrees in cw or ccw directions

Includes: 4074ENY Bag Assembly

Maximum Noise Rating, Driving (dBA @ 1m): 45

Shaft Adapter Type: Aluminum Hub, two set screws

Weight: 1.5 lb (0.68 kg)

Approvals:

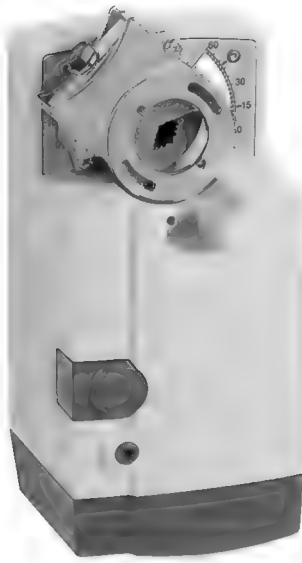
Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

Product Number	Rated Torque		Maximum Stall Torque		Timing, Nominal Driving @ 60 Hz (seconds)	Supply Voltage	Control Signal	Feedback	Input Impedance	Power Consumption		Comments
	(lb-in.)	(Nm)	(lb-in.)	(Nm)						Driving		
* ML6174A2002	70	8	130	14	90	24 Vac +/-20%	Floating, SPDT	With accessory	—	2.4 VA		—
* ML6174A2010	70	8	130	14	180	24 Vac +/-20%	Floating, SPDT	With accessory	—	2.4 VA		—
* ML6174B2019	70	8	130	14	90	24 Vac +/-20%	Floating, SPDT	—	—	2.4 VA		—
ML6174B2035	70	8	130	14	420	24 Vac +/-20%	Floating, SPDT	—	—	2.4 VA		—
ML6174C2018	70	8	130	14	180	24 Vac +/-20%	Floating, SPDT	With accessory	—	2.4 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML6174D2009	70	8	130	14	90	24 Vac +/-20%	Floating, SPDT	—	—	2.4 VA		Includes two 5/8 x 7/8 in. double knock-out conduit openings
ML7174A2001	70	8	130	14	90	24 Vac +/-20%	2-10 Vdc, 4-20 mA	—	45K ohm (2-10 Vdc signal), 536 ohm (4-20 mA signal)	5.4 VA		—

* TRADELINE models • SUPER TRADELINE models

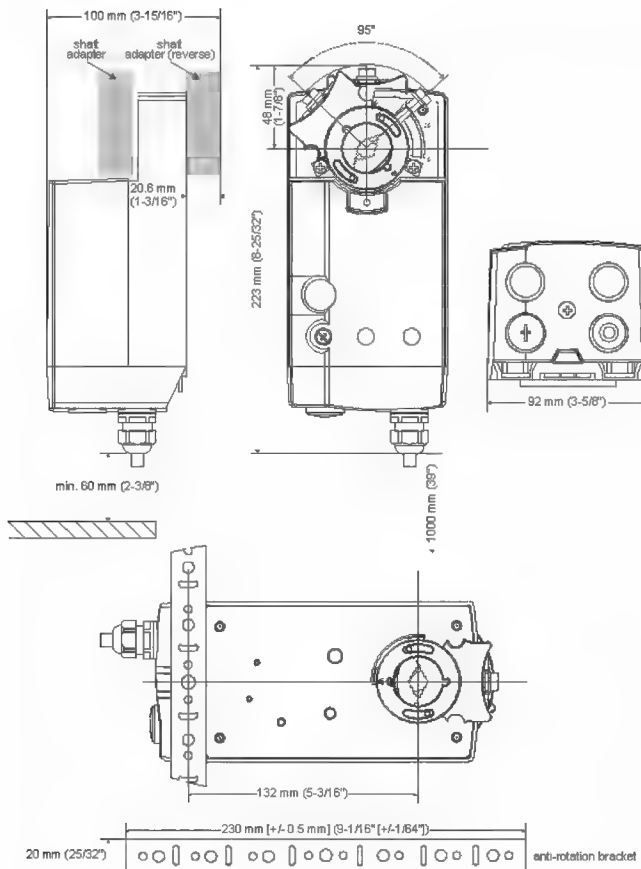
N20 Series Non-Spring Return Direct Coupled Actuator



These direct-coupled damper actuators provide adjustable modulating control for: air dampers, VAV units, air handling units, ventilation flaps, louvers, and reliable control for air damper applications with up to 4.6 m²/50 sq ft (seal-less dampers; air friction-dependent).

- Control for air damper applications with up to 50 sq ft assuming 3.5 in-lb per sq ft of damper area, velocity independent
- New self-centering shaft adapter.
- Access cover to facilitate connectivity.
- Declutch for manual adjustment.
- Mechanical end limits.
- Field-installable auxiliary switches.
- Rotation direction selectable by switch.
- Mountable in any orientation (no IP54 if upside down).
- Mechanical position indicator.
- CE approved
- UL approved

Dimension Diagrams



Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG) (Enclosed screw terminal strip (0.324 to 2.08 sq mm))

Environmental Rating: NEMA2

Fail Safe Mode: Non-Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)

External Auxiliary Switches Available: Yes

Materials: Plenum rated plastic housing

Manual Operation: Declutch Mechanism

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -5 F to +140 F (-20 C to +60 C)

Storage Temperature Range: -40 F to +175 F (-40 C to +80 C)

Frequency: 50 Hz, 60 Hz

Rotational Stroke Adjustment: Dual Integral Adj. Stops (3 degree increments)

Timing, Nominal Driving @ 60 Hz (seconds): 95

Power Consumption, Driving: 6 VA, 6 W

Maximum Noise Rating, Driving (dBA @ 1m): 40

Shaft Adapter Type: Self-centering clamping

Includes: Mounting Bracket, Self-Centering Shaft Adapter

Comments: Integral 1/2 in. NPSM conduit connection.

Weight: 3.2 lb (1.45 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

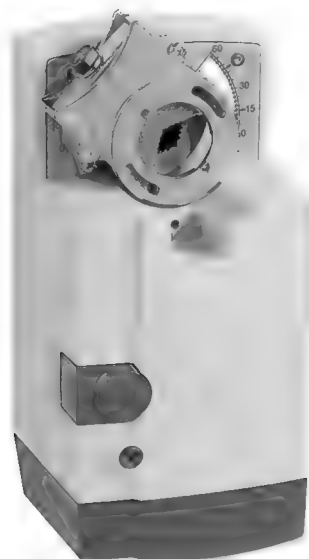
C-Tick: N314

Damper Actuators, Direct Coupled

Product Number	Catalog Number	Rated Torque		Maximum Stall Torque		Supply Voltage	Control Signal	Feedback	Input Impedance	Internal Auxiliary Switch
		(lb-in.)	(Nm)	(lb-in.)	(Nm)					
MN6120A1002	N2024-US	175	20	221	25	24 Vac +/-15%	Two Position, Floating	—	—	0
MN6120A1200	N2024-SW2-US	175	20	221	25	24 Vac +/-15%	Two Position, Floating	—	—	2
MN7220A2007	N20010-US	175	20	257	29	24 Vac +/-20%	(0)2-10 Vdc, (0)4-20mA	2-10 Vdc (max. output: ±1.0 mA)	100K ohm (voltage), 500 ohm (current)	0
MN7220A2205	N20010-SW2-US	175	20	257	29	24 Vac +/-20%	(0)2-10 Vdc, (0)4-20mA	2-10 Vdc (max. output: ±1.0 mA)	100K ohm (voltage), 500 ohm (current)	2

* TRADELINE models • SUPER TRADELINE models

N34 Series Non-Spring Return Direct Coupled Actuator



These direct coupled damper actuators provide adjustable modulating control for air dampers, VAV units, air handling units, ventilation flaps, louvers, and reliable control for air damper applications with up to 4.6 m²/50 sq ft (seal-less dampers; air friction-dependent).

- Control for air damper applications with up to 85 sq ft assuming 3.5 in-lb per sq ft of damper area, velocity independent
- New self-centering shaft adapter.
- Access cover to facilitate connectivity.
- Declutch for manual adjustment.
- Mechanical end limits.
- Field-installable auxiliary switches.
- Rotation direction selectable by switch.
- Mountable in any orientation (no IP54 if upside down).
- Mechanical position indicator.
- CE approved
- UL approved

Dimension Diagrams

See Diagrams on page 403

Dimensions, Approximate: 8.78 in high, 3.62 in wide, 3.15 in deep (223 mm high, 92 mm wide, 80 mm deep)

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG) (Enclosed screw terminal strip (0.324 to 2.08 sq mm))

Environmental Rating: NEMA2

Fail Safe Mode: Non-Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)

External Auxiliary Switches Available: Yes

Materials: Plenum rated plastic housing

Manual Operation: Declutch Mechanism

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -5 F to +140 F (-20 C to +60 C)

Storage Temperature Range: -40 F to +175 F (-40 C to +80 C)

Frequency: 50 Hz, 60 Hz

Timing, Nominal Driving @ 60 Hz (seconds): 95

Maximum Noise Rating, Driving (dBA @ 1m): 40

Shaft Adapter Type: Self-centering clamping

Weight: 3.2 lb (1.45 kg)

Includes: Integral 1/2 in. NPSM conduit connection.

Comments: Mounting Bracket, Self-Centering Shaft Adapter

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

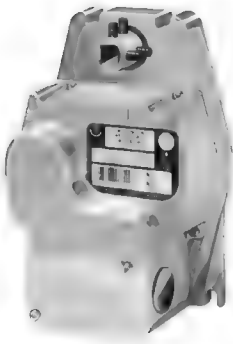
CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Product Number	Catalog Number	Rated Torque		Maximum Stall Torque		Supply Voltage	Control Signal	Feedback	Input Impedance	Power Consumption
		(lb-in.)	(Nm)	(lb-in.)	(Nm)					Driving
MN6134A1003	N3424-US	300	34	327	37	24 Vac +/-15%	Two Position, Floating	—	—	9 VA, 9 W
MN7234A2008	N34010-US	300	34	354	40	24 Vac +/-20%	(0)2-10 Vdc, (0)4-20mA	2-10 Vdc (max. output: ±1.0 mA)	100K ohm (voltage), 500 ohm (current)	8 VA, 6 W

* TRADELINE models • SUPER TRADELINE models

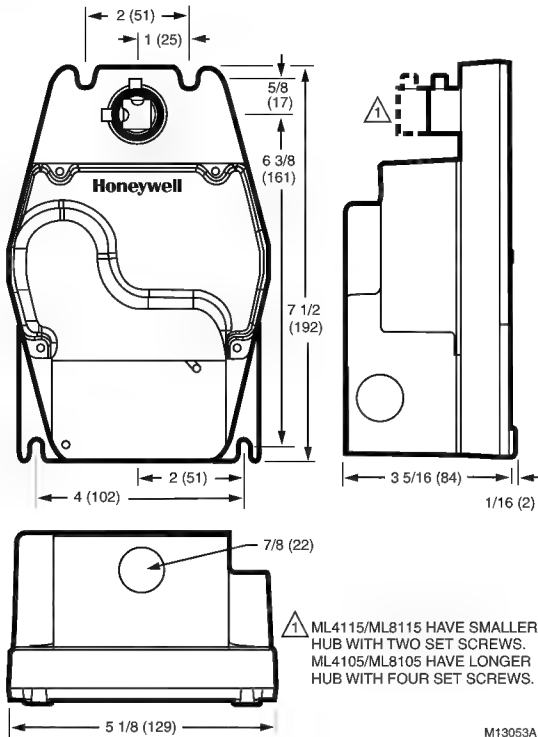
ML4115; ML8115 Fast-Acting, Two-Position Actuators



Spring return direct coupled actuators (DCA) for on/off damper control with an integral junction box. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. They are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350 F.

- Integral spring return.
- No audible noise during holding.
- Electronic circuitry provides efficient operation while eliminating the need for limit switches.
- Ninety-five degree angle of rotation for tight damper closure.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- Integral junction box with three conduit openings eliminates need for separate wiring box.
- Mounts to 3/8 or 1/2 in. round or square shaft.
- High-temperature indicator included.

Dimension Diagrams



Electrical Connections: 16 in. two color-coded leads
(406 mm two color-coded leads)

Environmental Rating: NEMA1

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1/2 square/round
(10 to 13 square/round)

External Auxiliary Switches Available: Yes, 32003532-003

Materials: Aluminum housing

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: 0 F to +130 F (-18 C to +55 C)

Storage Temperature Range: -40 F to 140 F (-40 C to 60 C)

Frequency: 60 Hz

Timing, Maximum Driving @ 60 Hz (seconds): 25

Timing, Maximum Spring Return (seconds): 15

Timing, Nominal Driving @ 60 Hz (seconds): 18

Maximum Noise Rating, Driving (dBA @ 1m): 65

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Aluminum Hub, two set screws

Comments: Integral junction box with three 7/8 in. conduit openings
(fittings not included)

Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

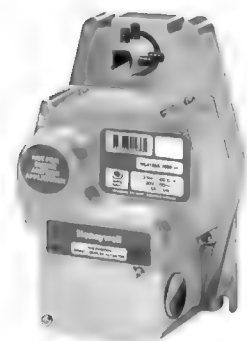
Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Minimum Driving Torque at 350 F		Supply Voltage	Control Signal	Power Consumption		Rotation to Open	Includes
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)			Driving	Holding		
ML4115A1009	30	3.4	30	3.4	150	17	30	3.4	120 Vac +/-10%	Two-position, SPST	0.18A, 18W	0.11A, 9W	CW	Ground Screw
ML4115B1008	30	3.4	30	3.4	150	17	30	3.4	120 Vac +/-10%	Two-position, SPST	0.18A, 18W	0.11A, 9W	CCW	Ground Screw
ML4115C1007	30	3.4	30	3.4	150	17	30	3.4	230 Vac +/-10%	Two-position, SPST	0.13A, 18W	0.10A, 11W	CW	—
ML4115D1006	30	3.4	30	3.4	150	17	30	3.4	230 Vac +/-10%	Two-position, SPST	0.13A, 18W	0.10A, 11W	CCW	—
ML8115A1005	30	3.4	30	3.4	150	17	30	3.4	24 Vac +/-20%	Two-position, SPST	16 VA	8 VA	CW	—
ML8115B1004	30	3.4	30	3.4	150	17	30	3.4	24 Vac +/-20%	Two-position, SPST	16 VA	8 VA	CCW	—

* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

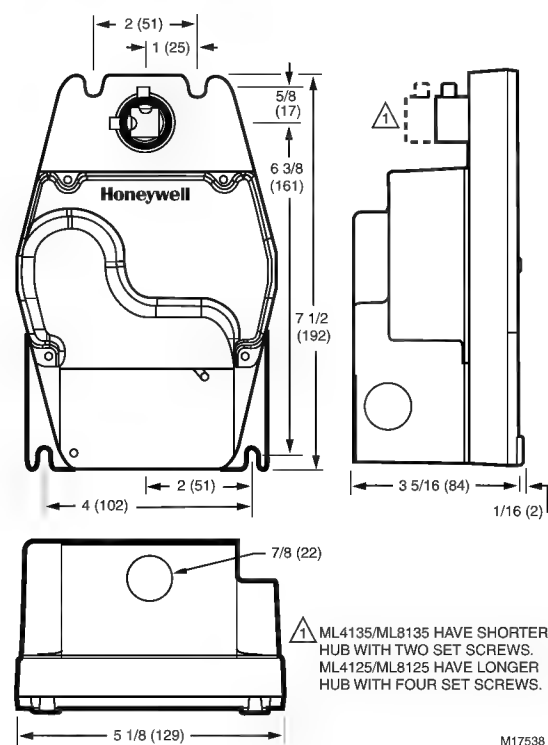
ML4125; ML4135; ML8125; ML8135 HVAC Fast-Acting, Two-Position Actuators



The ML4125, ML4135, ML8125 and ML8135 Fast-Acting, Two-Position Actuators are spring return direct coupled actuators (DCA) with an integral junction box for on/off damper control.

- Integral spring return.
- -40 C to 130 F (-40 C to 54 C) operating temperature range.
- No audible noise during holding.
- Electronic circuitry provides efficient operation while eliminating the need for limit switches.
- Ninety-five degree angle of rotation.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- Integral junction box with three conduit openings eliminates need for separate wiring box.
- Direct mounting to 3/8 or 1/2 in. round or square shaft.
- Not intended for smoke control systems.

Dimension Diagrams



Electrical Connections: 16 in. two color-coded leads (406 mm two color-coded leads)

Environmental Rating: NEMA1

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1/2 square/round (10 to 13 square/round)

External Auxiliary Switches Available: Yes, 32003532-003

Materials: Aluminum housing

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -40 F to +130 F (-40 C to +55 C)

Storage Temperature Range: -40 F to 140 F (-40 C to 60 C)

Control Signal: Two-position, SPST

Frequency: 60 Hz

Maximum Noise Rating, Driving (dBA @ 1m): 65

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Aluminum Hub, two set screws

Comments: Integral junction box with three 7/8 in. conduit openings (fittings not included)

Includes: Mounting Bracket, Ground screw (some models)

Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Timing, Maximum		Timing, Nominal	Supply Voltage	Power Consumption		Rotation to Open
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	Driving @ 60 Hz (sec)	Spring Return (sec)	Driving @ 60 Hz (sec)		Driving	Holding	
ML4125A1008	100	11.3	100	11.3	240	27	40	25	25	120 Vac +10%, -15%	0.16A, 15W	0.10A, 5W	CW
ML4125B1007	100	11.3	100	11.3	240	27	40	25	25	120 Vac +10%, -15%	0.16A, 15W	0.10A, 5W	CCW
ML4125C1006	100	11.3	100	11.3	240	27	40	25	25	230 Vac +/- 10%	0.12A, 18.6W	0.10A, 7W	CW
ML4125D1005	100	11.3	100	11.3	240	27	40	25	25	230 Vac +/- 10%	0.12A, 18.6W	0.10A, 7W	CCW
ML4135A1007	40	4.5	40	4.5	150	17	25	15	20	120 Vac +/- 10%	0.18A, 18W	0.11A, 9W	CW

* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Timing, Maximum		Timing, Nominal	Supply Voltage	Power Consumption		Rotation to Open
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	Driving @ 60 Hz (sec)	Spring Return (sec)	Driving @ 60 Hz (sec)		Driving	Holding	
ML4135B1006	40	4.5	40	4.5	150	17	25	15	20	120 Vac +/- 10%	0.18A, 18W	0.11A, 9W	CCW
ML8125A1004	100	11.3	100	11.3	240	27	40	25	25	24 Vac +20%, -10%	15.6 VA	4 VA	CW
ML8125B1003	100	11.3	100	11.3	240	27	40	25	25	24 Vac +20%, -10%	15.6 VA	4 VA	CCW
ML8135A1003	40	4.5	40	4.5	150	17	25	15	20	24 Vac +20%, -10%	18 VA	8.5 VA	CW
ML8135B1002	40	4.5	40	4.5	150	17	25	15	20	24 Vac +20%, -10%	18 VA	8.5 VA	CCW
* TRADELINE models • SUPER TRADELINE models													

Damper Actuators, Direct Coupled

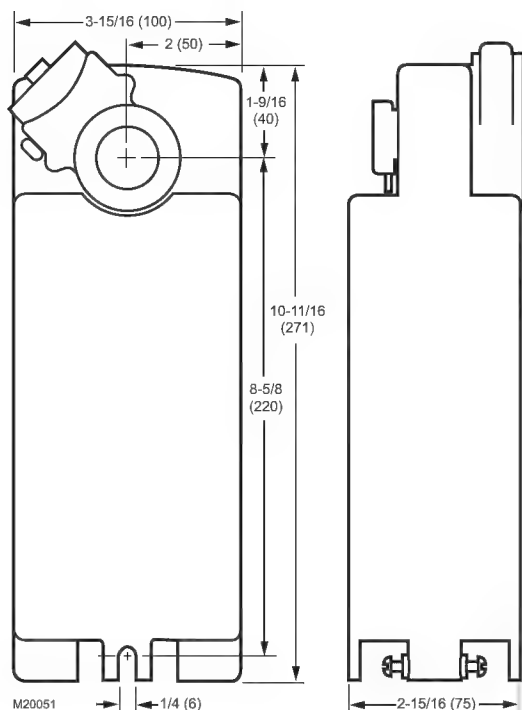
MS4120F; MS4620F; MS8120F Fast-Acting, Two-Position Actuators



Spring return direct coupled actuators (DCA) for on/off damper control. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation. They are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350F.

- 175 lb-in. (20 Nm) minimum driving torque at 350F (176C).
- Integral stainless steel spring return ensures level of return torque.
- Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.
- Fifteen-second spring return timing.
- No special cycling required during long-term holding.
- No audible noise during holding.
- Patented design eliminates need for limit switches and reduces power consumption.
- Models available with integral high temperature (350 F) SPST position-indicating switches (<7 degrees, >85 degrees).
- High temperature Teflon® lead wires.
- Ninety-five degree angle of rotation for tight damper closure.
- Actuator holds rated torque at reduced power level.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- High-temperature indicator included.
- Self-centering shaft adapter (SCSA), patent pending.

Dimension Diagrams



Electrical Connections: 39 in. Teflon-jacketed cable
(1m Teflon-jacketed cable)

Environmental Rating: NEMA2

Ingress Protection: IP54

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)

External Auxiliary Switches Available: Yes

Materials: Aluminum housing

Manual Operation: Manual Crank

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -40 F to +130 F (-40 C to +55 C)

Storage Temperature Range: -40 F to +140 F (-40 C to +60 C)

Frequency: 60 Hz

Timing, Maximum Spring Return (seconds): 15

Timing, Nominal Driving @ 60 Hz (seconds): 15

Maximum Noise Rating, Driving (dBA @ 1m): 70

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Comments: Two integral 3/8 in. flexible conduit connections

Includes: Mounting Bracket, Self-Centering Shaft Adapter, 3mm crank
Weight: 8 lb (3.63 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Minimum Driving Torque at 350 F		Supply Voltage	Control Signal	Internal Auxiliary Switch	Power Consumption		Rotation to Open
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)				Driving	Holding	
MS4120F1006	175	20	175	20	425	48	175	20	120 Vac +/-10%	Two-position, SPST	0	0.35A, 35W	0.15A, 10W	By orientation
MS4120F1204	175	20	175	20	425	48	175	20	120 Vac +/-10%	Two-position, SPST	2	0.35A, 35W	0.15A, 10W	By orientation

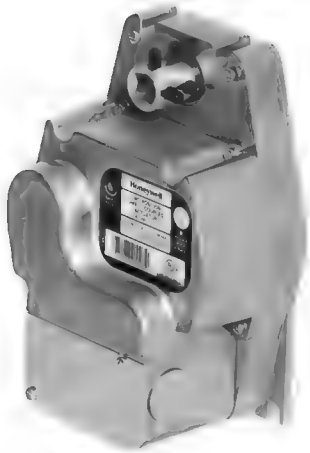
* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Minimum Driving Torque at 350 F		Supply Voltage	Control Signal	Internal Auxiliary Switch	Power Consumption		Rotation to Open
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)				Driving	Holding	
MS4620F1005	175	20	175	20	425	48	175	20	230 Vac +/-10%	Two-position, SPST	0	0.20A, 35W	0.14A, 10W	By orientation
MS4620F1203	175	20	175	20	425	48	175	20	230 Vac +/-10%	Two-position, SPST	2	0.20A, 35W	0.14A, 10W	By orientation
MS8120F1002	175	20	175	20	425	48	175	20	24 Vac +20%, -10%	Two-position, SPST	2	45 VA	10 VA	By orientation
MS8120F1200	175	20	175	20	425	48	175	20	24 Vac +20%, -10%	Two-position, SPST	2	45 VA	10 VA	By orientation
* TRADELINE models • SUPER TRADELINE models														

Damper Actuators, Direct Coupled

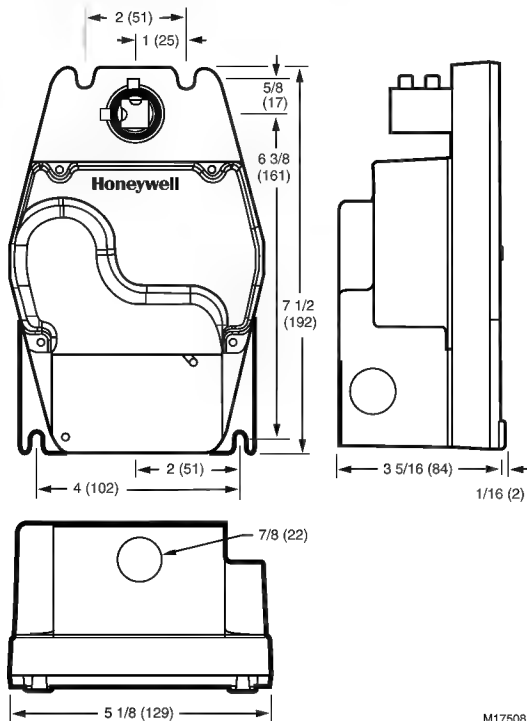
MS4209F, MS4309F, MS4709F, MS4809F, MS8209F, MS8309F Fast-Acting, Two-Position Actuators



Spring return direct coupled actuators (DCA) for on/off damper control with an integral junction box. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. They are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350 F.

- Integral spring return ensures level of return torque.
- Fifteen-second spring return timing.
- No special cycling required during long-term holding.
- No audible noise during holding.
- Patent pending design eliminates need for limit switches to reduce power consumption.
- Models available for 24, 120, and 230 Vac.
- Ninety-five degree angle of rotation for tight damper closure.
- Actuator holds rated torque at reduced power level.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- Integral junction box with three conduit openings eliminates need for separate wiring box.
- High-temperature indicator included.

Dimension Diagrams



M17508

Electrical Connections: 16 in. two color-coded leads
(406 mm two color-coded leads)

Environmental Rating: NEMA1

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1/2 square/round
(10 to 13 square/round)

External Auxiliary Switches Available: Yes, 32003532-003

Materials: Aluminum housing

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: 0 F to +130 F (-18 C to +55 C)

Storage Temperature Range: -40 F to 140 F (-40 C to 60 C)

Frequency: 60 Hz

Control Signal: Two-position, SPST

Timing, Maximum Driving @ 60 Hz (seconds): 25

Timing, Maximum Spring Return (seconds): 15

Timing, Nominal Driving @ 60 Hz (seconds): 14

Maximum Noise Rating, Driving (dBA @ 1m): 80

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Aluminum Hub, four set screws

Comments: Integral junction box with three 7/8 in. conduit openings
(fittings not included)

Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Product Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Minimum Driving Torque at 350 F		Supply Voltage	Power Consumption		Rotation to Open
	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)		Driving	Holding	
MS4209F1007	80	9	80	9	240	27	80	9	120 Vac +10%, -15%	0.25A, 23W	0.13A, 7W	CCW
MS4309F1005	80	9	80	9	240	27	80	9	120 Vac +10%, -15%	0.25A, 23W	0.13A, 7W	CW
MS4709F1014	80	9	80	9	240	27	80	9	230 Vac +/-10%	0.13A, 23W	0.09A, 7W	CCW
MS4809F1012	80	9	80	9	240	27	80	9	230 Vac +/-10%	0.13A, 23W	0.09A, 7W	CW
MS8209F1003	80	9	80	9	240	27	80	9	24 Vac +20%, -10%	23 VA	7 VA	CCW
MS8309F1001	80	9	80	9	240	27	80	9	24 Vac +20%, -10%	23 VA	7 VA	CW

* TRADELINE models • SUPER TRADELINE models

S05 Series Spring Return Direct Coupled Actuator

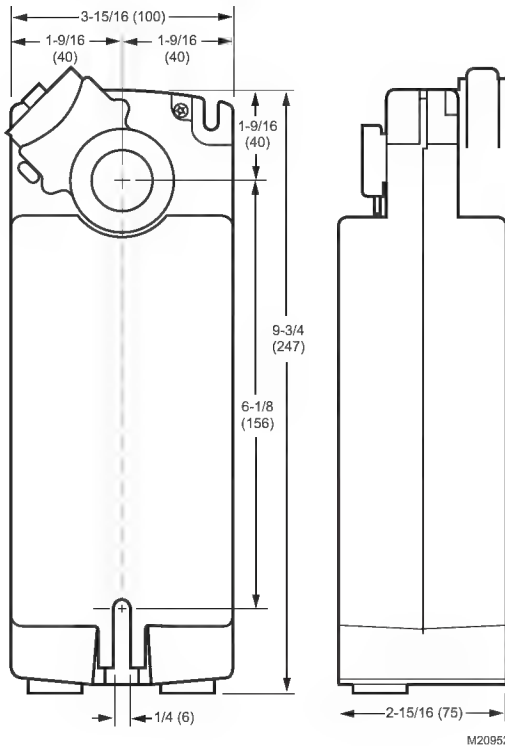


The S05 Series Spring Return Direct Coupled Actuators (DCA) are control actuators that provide proportioning control for valves and dampers. They accept a voltage signal from a controller to position a damper or valve at any chosen point between fully open and fully closed.

The S05010 DCA can also provide floating control capabilities.

- Control for air damper applications with up to 12.5 sq ft assuming 3.5 in-lb per sq ft of damper area, velocity independent
- Brushless DC submotor with electronic stall protection.
- Self-centering shaft adapter.
- Access cover to facilitate connectivity.
- Metal housing with mechanical end limits.
- Field-installable auxiliary switches.
- Spring return direction field-selectable.
- Hub includes position indicator.
- Manual winding capability with locking function.
- Models available with combined floating/modulating control in a single device.
- Models available with adjustable zero and span.
- Models available with line-voltage auxiliary switches.
- UL c/us listed and CE compliant.
- All Models are plenum-rated per UL873.

Dimension Diagrams



Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG) (Enclosed screw terminal strip (0.324 to 2.08 sq mm))

Environmental Rating: NEMA2

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)

External Auxiliary Switches Available: Yes

Materials: Aluminum housing, Plenum rated plastic access cover

Manual Operation: Manual Crank

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -40 F to +140 F (-40 C to +60 C)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Frequency: 60 Hz

Timing, Maximum Spring Return (seconds): 20

Timing, Nominal Driving @ 60 Hz (seconds): 90

Power Consumption

Driving: 14 VA

Holding: 6 VA

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Maximum Noise Rating, Driving (dBA @ 1m): 40

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Comments: Integral 1/2 in. NPSM conduit connection.

Includes: Mounting Bracket, Self-Centering Shaft Adapter, 3mm crank

Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

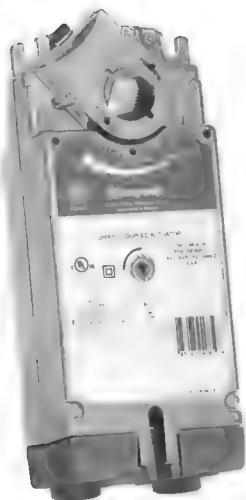
C-Tick: N314

Product Number	Catalog Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Supply Voltage	Control Signal	Feedback	Input Impedance	Rotation to Open
		(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)					
MS4105A1002	S05120-2POS-US	44	5	44	5	75	8.5	120 Vac +/-10%	Two-position, SPST	—	—	By orientation
MS7505A2008	S05010-US	44	5	44	5	75	8.5	24 Vac +/-20%	(0)2-10Vdc, Floating	2-10 Vdc (max. output: ±1.0 mA)	145K ohm	By orientation, By switch
MS8105A1008	S0524-2POS-US	44	5	44	5	75	8.5	24 Vac +/-20%	Two-position, SPST	—	—	By orientation

* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

S10 Series Spring Return Direct Coupled Actuator



The S10 Series Spring Return Direct Coupled Actuators (DCA) are control actuators that provide proportioning control for valves and dampers. They accept a voltage signal from a controller to position a damper or valve at any chosen point between fully open and fully closed.

The S10010 DCA can also provide floating control capabilities.

- Brushless DC submotor with electronic stall protection.
- Self-centering shaft adapter.
- Access cover to facilitate connectivity.
- Metal housing with mechanical end limits.
- Field-installable auxiliary switches.
- Spring return direction field-selectable.
- Hub includes position indicator.
- Manual winding capability with locking function.
- Models available with combined floating/modulating control in a single device.
- Models available with adjustable zero and span.
- Models available with line-voltage auxiliary switches.
- C-UL US listed and CE compliant.
- All Models are plenum-rated per UL873.

Dimension Diagrams

See Diagrams on page 411

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG) (Enclosed screw terminal strip (0.324 to 2.08 sq mm))

Environmental Rating: NEMA2

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH, non-condensing

Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)

External Auxiliary Switches Available: Yes

Materials: Aluminum housing, Plenum rated plastic access cover

Manual Operation: Manual Crank

Mounting Method: Rotational Stroke: 95 +/- 3 degrees

Ambient Temperature Range: -40 F to +140 F (-40 C to +60 C)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Supply Voltage: 120 Vac +/-10%

Frequency: 60 Hz

Timing, Maximum Spring Return (seconds): 20

Timing, Nominal Driving @ 60 Hz (seconds): 90

Power Consumption

Driving: 14 VA

Holding: 6 VA

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Maximum Noise Rating, Driving (dBA @ 1m): 40

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Comments: Integral 1/2 in. NPSM conduit connection.

Includes: Mounting Bracket, Self-Centering Shaft Adapter, 3mm crank

Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

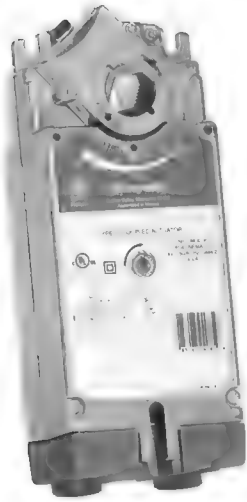
CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Product Number	Catalog Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Supply Voltage	Control Signal	Feedback	Input Impedance	Internal Auxiliary Switch	Rotation to Open
		(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)						
MS4110A1002	S10120-2PO-US	88	10	88	10	150	17	120 Vac +/-10%	Two-position, SPST	—	—	0	By orientation
MS4110A1200	S10120-2PO-SW-US	88	10	88	10	150	17	120 Vac +/-10%	Two-position, SPST	—	—	2	By orientation
MS7510A2008	S10010-US	88	10	88	10	150	17	24 Vac +/-20%	(0)2-10Vdc, Floating	2-10 Vdc (max. output: ±1.0 mA)	145K ohm	0	By switch, By orientation
MS7510A2206	S10010-SW2-US	88	10	88	10	150	17	24 Vac +/-20%	(0)2-10Vdc, Floating	2-10 Vdc (max. output: ±1.0 mA)	145K ohm	2	By switch, By orientation
MS8110A1008	S1024 -2PO-US	88	10	88	10	150	17	24 Vac +/-20%	Two-position, SPST	—	—	0	By orientation
MS8110A1206	S1024-2PO-SW2-US	88	10	88	10	150	17	24 Vac +/-20%	Two-position, SPST	—	—	2	By orientation

* TRADELINE models • SUPER TRADELINE models

S20 Series Spring Return Direct Coupled Actuator



Dimension Diagrams
See Diagrams on page 411

Electrical Connections: Enclosed screw terminal strip (22 to 14 AWG) (Enclosed screw terminal strip (0.324 to 2.08 sq mm))
Environmental Rating: NEMA2
Fail Safe Mode: Spring Return
Humidity Ratings: 5 to 95% RH, non-condensing
Compatible Damper Shafts in inches (mm): 3/8 to 1.06 round or 3/8 to 11/16 square (10 to 27 round or 10 to 18 square)
External Auxiliary Switches Available: Yes
Materials: Aluminum housing, Plenum rated plastic access cover
Manual Operation: Manual Crank
Mounting Method: Rotational Stroke: 95 +/- 3 degrees
Ambient Temperature Range: -40 F to +140 F (-40 C to +60 C)
Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)
Frequency: 60 Hz
Timing, Maximum Spring Return (seconds): 20

Spring return direct coupled actuators (DCA) for on/off damper control. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation. They are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

- 175 lb-in. (20 Nm) minimum driving torque at 350°F (176°C).
- Integral stainless steel spring return ensures level of return torque.
- Reversible mounting allows actuator to be used for either clockwise (cw) or counterclockwise (ccw) spring rotation.
- Fifteen-second spring return timing.
- No special cycling required during long-term holding.
- No audible noise during holding.
- Patented design eliminates need for limit switches and reduces power consumption.
- Models available with integral high temperature (350°F) SPST position-indicating switches (<7°, >85°).
- High temperature Teflon® lead wires.
- Ninety-five degree angle of rotation.
- Actuator holds rated torque at reduced power level.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- High-temperature indicator included.
- Self-centering shaft adapter (SCSA), patent pending.

Timing, Nominal Driving @ 60 Hz (seconds): 90

Rotational Stroke Adjustment: Mechanically limited 5 degree increments

Power Consumption

Driving: 16 VA

Holding: 6 VA

Maximum Noise Rating, Driving (dBA @ 1m): 40

Maximum Noise Rating, Holding (dBA @ 1m): 20 (no audible noise)

Shaft Adapter Type: Self-centering clamping

Comments: Integral 1/2 in. NPSM conduit connection.

Includes: Mounting Bracket, Self-Centering Shaft Adapter, 3mm crank
Weight: 6 lb (2.72 kg)

Approvals:

Underwriters Laboratories, Inc: UL873, Plenum Rated

Canadian Underwriters Laboratories, Inc: cUL C22.2 No. 24-93

CE: 89/336/ECC, 73/23/EEC

C-Tick: N314

Product Number	Catalog Number	Rated Torque		Spring Return Torque		Maximum Stall Torque		Supply Voltage	Control Signal	Feedback	Input Impedance	Internal Auxiliary Switch	Rotation to Open
		(lb-in.)	(Nm)	(lb-in.)	(Nm)	(lb-in.)	(Nm)						
MS4120A1001	S20120-2PO-US	175	20	175	20	300	34	120 Vac +/-10%	Two-position, SPST	—	—	0	By orientation
MS4120A1209	S20120-2PO-SW2-US	175	20	175	20	300	34	120 Vac +/-10%	Two-position, SPST	—	—	2	By orientation
MS7520A2007	S20010-US	175	20	175	20	300	34	24 Vac +/-20%	(0)2-10Vdc, Floating	2-10 Vdc (max. output: ±1.0 mA)	145K ohm	0	By switch, By orientation
MS7520A2205	S20010-SW2-US	175	20	175	20	300	34	24 Vac +/-20%	(0)2-10Vdc, Floating	2-10 Vdc (max. output: ±1.0 mA)	145K ohm	2	By switch, By orientation
MS8120A1007	S2024-2PO-US	175	20	175	20	300	34	24 Vac +/-20%	Two-position, SPST	—	—	0	By orientation
MS8120A1205	S2024-2PO-SW2-US	175	20	175	20	300	34	24 Vac +/-20%	Two-position, SPST	—	—	2	By orientation

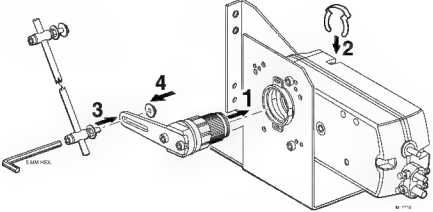
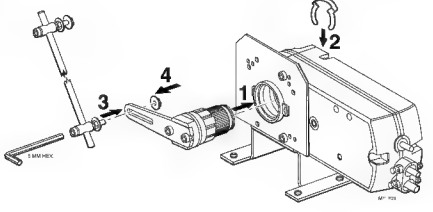
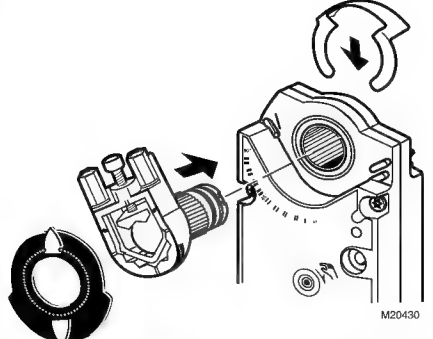

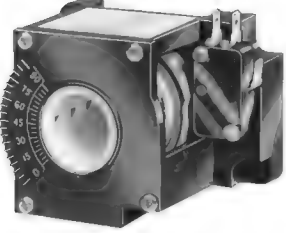


* TRADELINE models • SUPER TRADELINE models

Damper Actuators, Direct Coupled

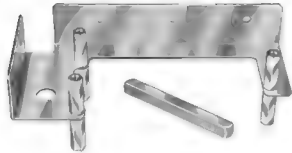
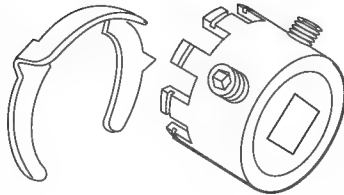
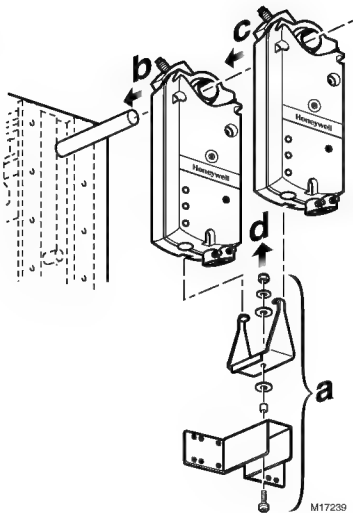
Accessories - Direct Coupled Damper Actuators

OS Number	Description	Used With	
205755	Hub Insert, 1/2 in. (13mm) Used With: 150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	
205759	Hub Insert, 5/8 in. (16mm) Used With: 150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	
205784	Mounting Bracket Used With: 25 & 53 lb-in SR Actuators ("ML" Series)	25 & 53 lb-in SR Actuators ("ML" Series)	
205685	Crank Arm Kit. Used With: 150 lb-in NSR Actuators ("ML" Series)	300 lb-in NSR Actuators ("ML" Series)	
205846	Crank Arm Kit Used With: 300 lb-in NSR Actuators ("ML" Series)	300 lb-in NSR Actuators ("ML" Series)	
205850A	End Stop Kit	25 & 53 lb-in SR Actuators ("ML" Series)	
205860	Electronic Remote Minimum Position Potentiometer	ML7164, Proportional Actuators	
205870	Shaft Adapter, 1 in. w/Crank Arm Used With: 25 & 53 lb-in SR Actuators ("ML" Series)	25 & 53 lb-in SR Actuators ("ML" Series)	
205880	Shaft Adapter, 1 in. Used With: 25 & 53 lb-in SR Actuators ("ML" Series)	25 & 53 lb-in SR Actuators ("ML" Series)	

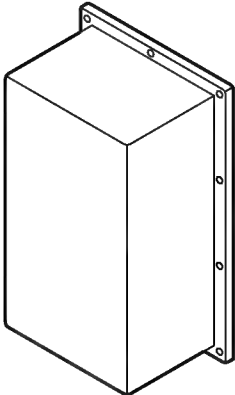
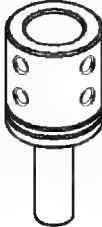

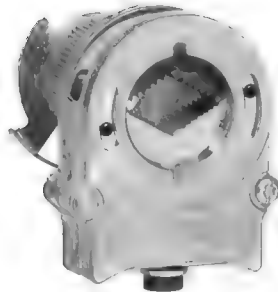
Damper Actuators, Direct Coupled

OS Number	Description	Used With	
210033	Frame Mount Kit Used With: 142 lb-in Spring Return Actuators	142 lb-in. Spring Return Actuators ("ML" Series)	
210034	Floor Mount Kit Used With: 142 lb-in Spring Return Actuators	142 lb-in. Spring Return Actuators ("ML" Series)	
210035	Jackshaft 1" (1.06") Adapter Used With: 142 lb-in Spring Return Actuators	142 lb-in. Spring Return Actuators ("ML" Series)	
200976A	Auxiliary Feedback Potentiometer (0 to 500 ohm) Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
200976C	Auxiliary Feedback Potentiometer (0 to 2000 ohm) Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
201052A	Auxiliary Switch Package, Single Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
201052B	Auxiliary Switch Package, Double Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
205820A	3-Point Mounting Kit Used With: 150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	
205830A	Rotary-to-Linear Kit Used With: 35 & 70 lb-in NSR and 25, 44, 53, & 88 lb-in SR Actuators	35 & 70 lb-in NSR and 25, 44, 53, & 88 lb-in SR Actuators	

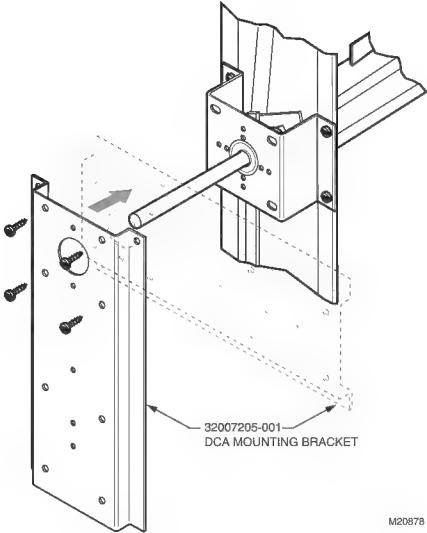
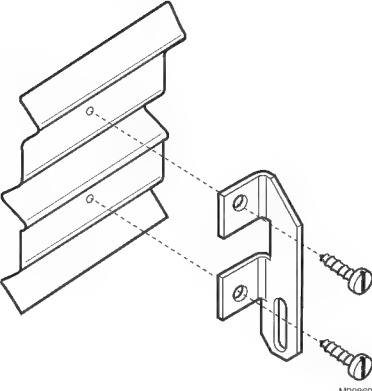
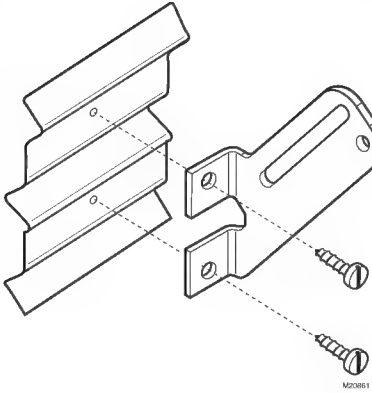
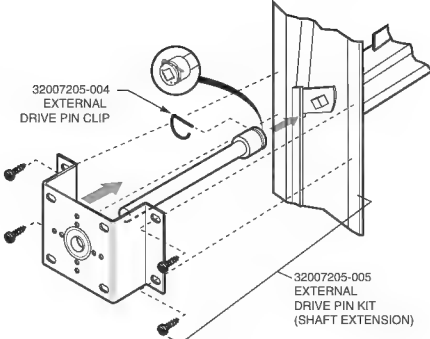
Damper Actuators, Direct Coupled

OS Number	Description	Used With	
205840A	Tandem Mount Kit (Series 60 and 80 only). Used With: 150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	
205843B	Hub Insert, 1 in. (25mm) Round Used With: 300 lb-in NSR Actuators ("ML" Series)	300 lb-in NSR Actuators ("ML" Series)	
205849A	Hub Insert, 5/8 in. (17mm) Round Used With: 300 lb-in NSR Actuators ("ML" Series)	300 lb-in NSR Actuators ("ML" Series)	
205856B	Hub Insert, 3/4 in. (19mm) Round Used With: 300 lb-in NSR Actuators ("ML" Series)	300 lb-in NSR Actuators ("ML" Series)	
26026G	Damper Crank Arm, 1/2 in. damper shaft Used With: All Actuators & Dampers	All Actuators & Damper	
27520A	Push Rod (5/16"dia., 5" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520B	Push Rod (5/16"dia., 10" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520C	Push Rod (5/16"dia., 12" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520D	Push Rod (5/16"dia., 15" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520E	Push Rod (5/16"dia., 18" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520G	Push Rod (5/16"dia., 24" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520H	Push Rod (5/16"dia., 28" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520J	Push Rod (5/16"dia., 32" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520K	Push Rod (5/16"dia., 36" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520L	Push Rod (5/16"dia., 48" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
27520Q	Push Rod (5/16"dia., 8" length) Used With: All Actuators & Dampers	All Actuators & Dampers	
32002993-001	Tandem Mount Kit Used With: 142 lb-in Spring Return and 300 in-lb Non-Spring Return Actuators	142 lb-in. Spring Return and 300 lb-in. Non-Spring Return Actuators	

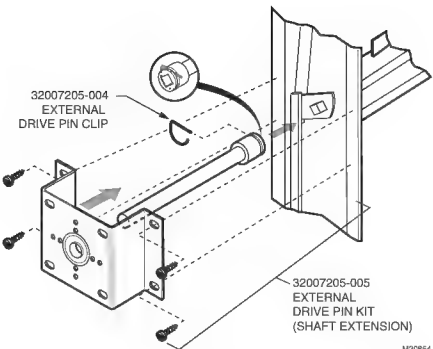
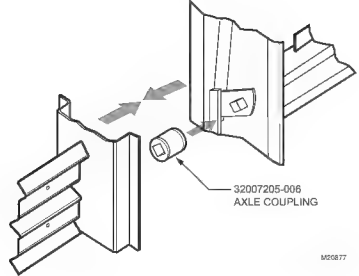
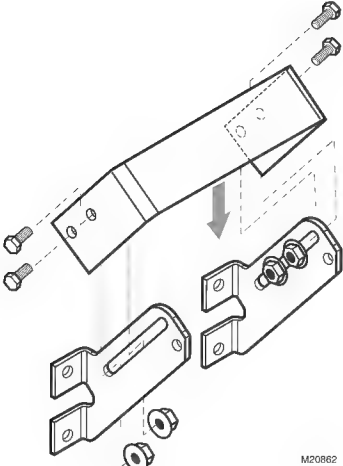
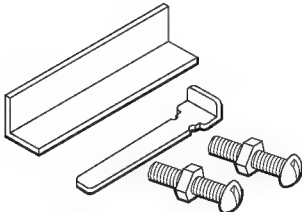
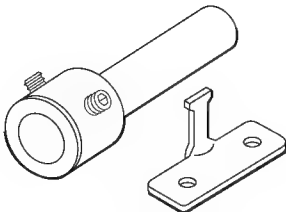
Damper Actuators, Direct Coupled

OS Number	Description	Used With	
32003036-001	Weather Enclosure Used With: All Actuators	All Actuators	
32003167-001	3/8 in. Shaft Adapter Used With: ML6161 ML6174 ML7161 ML7174 ML7999	ML6161, ML6174, ML7161, ML7174, ML7999	
32003168-001	Short Shaft Adapter (3/4" to 1/2") Used With: All Actuators & Dampers	All Actuators & Dampers	
32003168-002	Short Shaft Adapter (5/8" to 1/2") Used With: All Actuators & Dampers	All Actuators & Dampers	
32003168-003	Short Shaft Adapter (9/16" to 1/2") Used With: All Actuators & Dampers	All Actuators & Dampers	
32003532-003	High Temperature Dual Switch Assembly	ML4105, ML8105, ML4115, ML8115, ML4125, ML8125, ML4135, ML8135, MS4209, MS4309, MS4709, MS4809, MS8209, MS8309	
32004254-001	Self-Centering Shaft Adapter Used With: N20 Actuators	N20 Actuators	
32004254-002	Self-Centering Shaft Adapter Used With: S05, S10, S20 Actuators	S05, S10, S20 Actuators	
32004254-003	Self-Centering Shaft Adapter Used With: N34 Actuators	N34 Actuators	


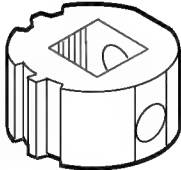
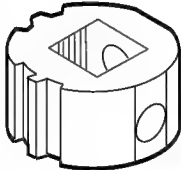
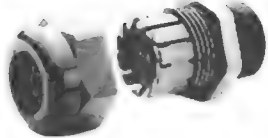



Damper Actuators, Direct Coupled

OS Number	Description	Used With	
32007205-001	Direct Coupled Actuator Mounting Bracket Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	 <p>32007205-001—DCA MOUNTING BRACKET</p> <p>M20878</p>
32007205-002	Damper Blade Drive Lever (Small) Used With: All Actuators & Dampers	All Actuators & Dampers	 <p>32007205-002</p> <p>M20880</p>
32007205-003	Damper Blade Drive Lever (Large) Used With: All Actuators & Dampers	All Actuators & Dampers	 <p>32007205-003</p> <p>M20881</p>
32007205-004	Retaining Clip, Damper External Drive Pin Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	 <p>32007205-004 EXTERNAL DRIVE PIN CLIP</p> <p>32007205-005 EXTERNAL DRIVE PIN KIT (SHAFT EXTENSION)</p> <p>M20882</p>

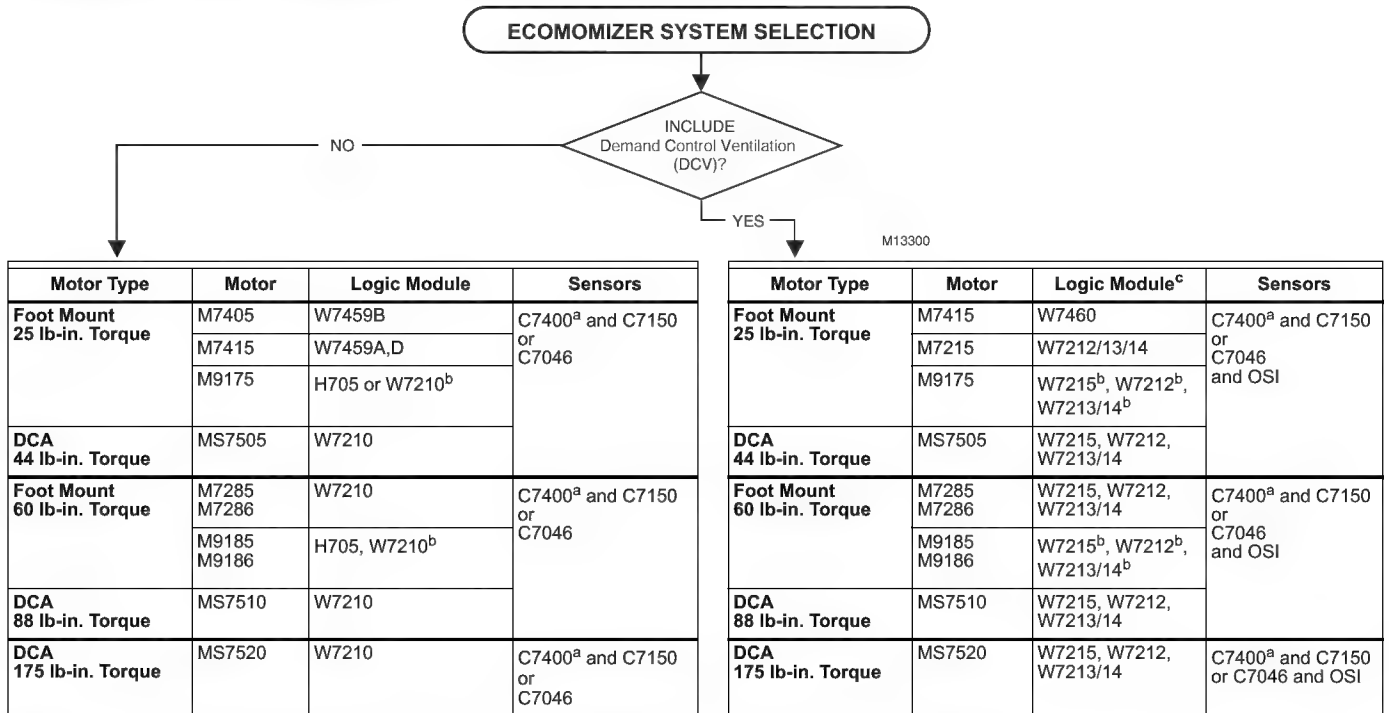
Damper Actuators, Direct Coupled

OS Number	Description	Used With	
32007205-005	Damper External Drive Pin Kit Used With: Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	— Damper with External Actuator Mounting (i.e., 32007205-005 Kit)	 <p>32007205-004 EXTERNAL DRIVE PIN CLIP</p> <p>32007205-005 EXTERNAL DRIVE PIN KIT (SHAFT EXTENSION)</p> <p>M20864</p>
32007205-006	Damper Axle Coupling Used With: Multi-Section Dampers	Multi-Section Dampers	 <p>32007205-006 AXLE COUPLING</p> <p>M20877</p>
32007205-007	Jumper Bracket Used With: Multi-Section Dampers	Multi-Section Dampers	 <p>M20862</p>
4074ENG	Stop Pin Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
4074ENJ	Minimum Position Kit Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
4074ENY	3/8" Shaft Kit Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
4074EVK	Short Shaft Kit Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	

Damper Actuators, Direct Coupled

OS Number	Description	Used With	
7640QW	Enclosure for Conduit Connection Used With: ML6161, ML6174, ML7161, ML7174	ML6161, ML6174, ML7161, ML7174	
27518	Ball Joint (5/16") Used With: All Actuators & Dampers	All Actuators & Dampers	
103598	Ball Joint (1/4") Used With: All Actuators & Dampers	All Actuators & Dampers	
205617	Hub Insert, 3/4 in. (19mm) Used With: 150 lb-in NSR Actuators ("ML" Series)	150 lb-in. NSR Actuators ("ML" Series)	
205649	Mounting Bracket Used With: 150 & 300 lb-in NSR and SR (except 25, 53 & 142 lb-in) Actuators	150 and 300 lb-in. NSR and SR (except 25, 53 & 142 lb-in) Actuators	
205753	Hub Insert, 3/8 in. (10mm) Used With: 150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	150 lb-in NSR and 25 & 53 lb-in Actuators ("ML" Series)	
32000085-001	Strain Relief Fitting (10 pack)	"MS" and "MN" Series Actuators	
SW2-US	Auxiliary Switch Package (2 adjustable SPDT switches)	"MS" and "MN" Series Actuators	
50000407-001	Tandem Mounting Kit (Spring Return)	"MS" Series Actuators	
50000407-002	Tandem Mounting Kit (Non-Spring Return)	"MN" Series Actuators	
50001194-001	Foot Mounting/Crankarm Kit	"MS" and "MN" Series Actuators	

Economizer Systems Quick Selection Guide



^a Enthalpy sensor. Use two for differential enthalpy and one for single enthalpy. For Dry Bulb only, use C7650 instead.

^b To operate a Series 90 motor, the W7210, W7212, W7213, W7214, and W7215 require a Q7230 interface module or the proper resistor combination (included in the 4074EJM resistor kit), see form 63-2544 for details.

^c Sensor with 2-10 Vdc output; for example 2-10 Vdc CO sensor. OSI sensor for use with W7215B and W7460B only.

NOTE: The W859, W973 rooftop controllers—typically installed with H205 changeover controllers and Series 90 Modutrol[®] Motors—can be retrofit using W7210, W7212 or W7215 Economizer Logic Modules and a Q7230 or the proper resistor combination. Refer to form 63-2544 for details on using Economizer Logic Modules with Series 90 motors.

Logic Module Details.

Model	Indoor Sensor Input (ISI)	Outdoor Sensor Input (OSI)	Enthalpy High Limit	Exhaust Fan Setpoint	Shutdown and Air Change	Purge	Motors Controlled	Model Number
H705 ^a	No	No	None	None	No	No	Series 90	H705A1003
W7459	No	No	No	None	No	No	M7415	W7459A1001
			Yes					W7459D1005
W7210	No	No	No	None	No	No	Series 72	W7210A1001
			Yes					W7210D1005
W7212	Yes	No	No	Adjustable	No	No	Series 72	W7212A1009
W7213/14 ^b	Yes	No	No	Adjustable	No	No	Series 72	W7213A1008 ^b
								W7214A1007 ^b
W7215	Yes	No	No	Adjustable	Yes	Yes	Series 72	W7215A1006
		Yes	Fixed	No				W7215B1004

^a The H705 includes a SPDT logic module and C7400 sensor (both affixed to the mounting plate).

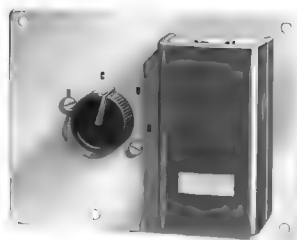
^b Terminals B-B1 (W7213) for heat pump applications, terminals O-O1 (W7214) for heat pump applications.

Sensor Details.

Model	Sensor of	Details	Comments	Model Number	
				No Display	With Display
C7046	Temperature	discharge air	—	C7046A1004	—
C7150		mixed air	—	C7400A1004	—
C7400	Enthalpy	changeover	—	C7400A1004	—
C7650	Temperature	—	—	C7650A1001	—
C7232	CO ₂	wall mount	Outputs: one relay, one 0-10 Vdc analog	C7232A1016	C7232A1008
		duct mount	Outputs: one 0-10 Vdc analog	C7232B1014	C7232B1006

Economizers—Logic Modules

H205 Enthalpy Controller



Dimensions, Approximate: 5 1/4 in. high, 3 1/16 in. wide, 1 3/16 in. deep (133.3 mm high, 79 mm wide, 30.2 mm deep)
Contact Ratings: Terminals 1 and 2: 50VA at 24Vac. Terminals 2 and 3: 100mA minimum to 250mA maximum at 24Vac.
Supply Voltage: 24 Vac

Senses total heat content (temperature and relative humidity) of outdoor air.

- Mounts in any position in outdoor air duct.
- Controls amount of outside air brought into system with respect to total heat content (or enthalpy) of outside air.
- Combines temperature and humidity sensors into a single device.
- Nylon humidity sensor.
- Liquid-filled bulb temperature sensing element, mounted on back of control.

Frequency: 50 Hz, 60 Hz

Operating Temperature Range: 53 F to 78F (12 to 26 C)

Humidity: 10 to 80% RH

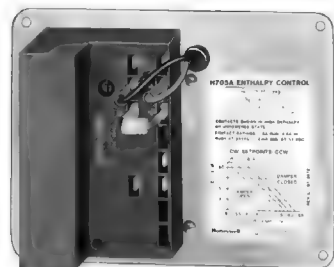
Approvals:

Underwriters Laboratories, Inc: Component UL

Product Number	Description	Comments	Used With
H205A1012	Senses total heat content (temperature and relative humidity) of outdoor air.	Includes case and cover, mounting plate, adjustable knob and scale	W859F
H205A1038	Senses total heat content (temperature and relative humidity) of outdoor air.	—	Electronic systems
H205A1046	Senses total heat content (temperature and relative humidity) of outdoor air.	Includes case and cover, mounting plate, adjustable knob and scale	M745

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H705 Solid State Enthalpy Controller



Dimensions, Approximate: 4 3/4 in. high, 6 in. wide, 2 1/2 in. deep (120 mm high, 154 mm wide, 80 mm deep)
Contact Ratings: 1.5 A Run @ 24 Vac, 3.5 A Inrush @ 24 Vac
Supply Voltage: 20-28V at 60 Hz, 20-26V at 50 Hz
Frequency: 50 Hz, 60 Hz
Operating Temperature Range: 45 F to 95 F (7 to 35 C)
Humidity: 20 to 90% RH

Provides solid state enthalpy changeover control in economizer systems.

- Consists of a W7459A type solid state economizer logic module and a C7400 Solid State Enthalpy Sensor on a mounting plate.
- Mounts in any position in outdoor air duct.
- Use enthalpy setpoint to select desired combination of air temperature and humidity.
- Use a second C7400A Sensor for differential changeover control to maximize savings.
- Reliable solid state humidity sensing element.
- Thermistor temperature sensing element.
- Maximizes use of outdoor air for free cooling.
- Use in electronic and electromechanical systems.

Approvals:

Underwriters Laboratories, Inc: UL 94V-O

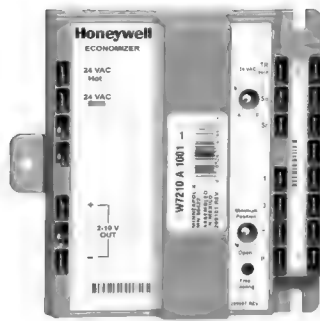
Accessories:

4074EJM 1.2K ohm checkout resistor, 620 ohm resistor, and jumper
S963B1128 Manual Potentiometer (135 ohm)

Product Number	Description	Comments	Used With
H705A1003	Includes W7459 and C7400	SPDT-Terminals 1 and 2 make with enthalpy increase above setpoint; terminals 2 and 3 make with enthalpy decrease.	Electronic or electromechanical systems

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W7210 Solid State Economizer Logic Modules



Use with C7400 Enthalpy Sensor or C7650 Dry Bulb Temperature Sensor and Honeywell Series 72 actuators to proportion outdoor and return air dampers for economizer control in commercial HVAC equipment.

- Operates from cooling space thermostat to provide a totally integrated control system.
- Solid state control package provides accuracy, reliability and stability.
- Combines solid state enthalpy or dry bulb changeover control, minimum damper position potentiometer and compressor staging relay functions.
- Optional differential enthalpy control provides greater economizer savings than single enthalpy control by selecting the most economical air for cooling.
- Enthalpy setpoint (A-D) on economizer module controls the combination of air temperature and humidity that is suitable for free cooling.
- High-impact, glass-fiber reinforced plastic case.
- Built-in adjustable minimum damper position potentiometer determines the amount of outdoor air admitted to meet minimum ventilation requirements. Includes terminals to connect optional S963B1128 Remote Minimum Position Potentiometer for remote damper control.
- LED indicates when free cooling is available.

Dimensions, Approximate: 5 3/16 in. high, 4 11/16 in. wide, 1 9/16 in. deep (119 mm high, 132 mm wide, 40 mm deep)

Contact Ratings: 1.5 A Run @ 24 Vac, 3.5 A Inrush @ 24 Vac

Supply Voltage: 24 Vac

Frequency: 50 Hz, 60 Hz

Operating Temperature Range: -40 F to 125 F (-40 to 52 C)

Humidity: 5 to 95% RH, non-condensing

Approvals:

Underwriters Laboratories, Inc: Flammability Rating UL94V-5V

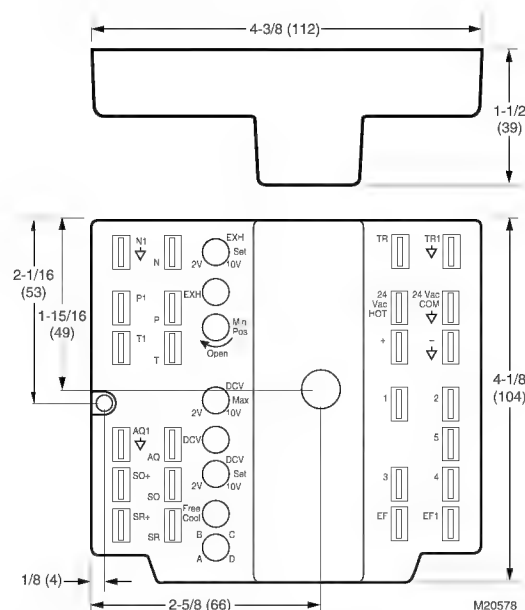
Accessories:

S963B1128 Manual Potentiometer (135 ohm)

Product Number	Input	Output	Use with Sensor	Description	Comments	Used With
W7210A1001	Dry Bulb Temperature: C7650 Sensor, Enthalpy: C7400 Sensor	Two SPDT, one 2-10Vdc	C7150, C7046, C7650, C7400	Series 72 Economizer Logic Module	Economizer Logic Module operates Series 72 actuators. Optional remote minimum position pot.	Honeywell Series 72 actuators
W7210D1005	Dry Bulb Temperature: C7650 Sensor, Enthalpy: C7400 Sensor	Two SPDT, one 2-10Vdc	C7150, C7046, C7650, C7400	Series 72 Economizer Logic Module	Economizer Logic Module operates Series 72 actuators. Optional remote minimum position pot. High enthalpy limit.	Honeywell Series 72 actuators

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W7212; W7213; W7214 Demand Control Ventilation Economizer Logic Modules



- Operates from thermostat and DCV sensor to provide a totally integrated control system.
- Solid state control package provides accurate, reliable and stable control.
- Mounts on M7215 Motor or ductwork.
- Control can be tempered by DCV and fan cycling.
- The W7212 is used with Honeywell Series 72 actuators.
- Combines minimum and DCV maximum damper position potentiometers with compressor staging relay.
- Functions with solid state enthalpy or dry bulb changeover control.
- Terminals included for switching between Occupied and Unoccupied operation.
- Terminals included for connecting optional S963B1128 Remote Potentiometer for remote minimum damper position control.
- LED indicates when free cooling is available.
- LED indicates when module is in DCV mode.
- LED indicates when exhaust fan contact is closed.

Underwriters Laboratories, Inc: cUL, UL94-5V, CE, C-tick,
Meets UL873 plenum requirements

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W7215A,B; W7460 Enhanced Economizer Logic Modules



Use with C7400, or C7650 and C7150B or C7046 Sensors; indoor air quality (IAQ) sensor (2-10 Vdc); and Honeywell Series 72 actuators, or M7415 Damper Actuator to proportion outdoor and return air dampers for economizer and ventilation control in commercial HVAC equipment.

Dimensions, Approximate: 8 11/16 in. high, 5 13/16 in. wide, 1 11/16 in. deep (221 mm high, 147 mm wide, 43 mm deep)

Contact Ratings: 1.5 A Run @ 30 Vac, 3.5 A Inrush @ 30 Vac

Supply Voltage: 24 Vac

Frequency: 50/60 Hz

Operating Temperature Range: -25 F to 125 F (-32 to 52 C)

Humidity: 5 to 95% RH, non-condensing

- Input from DCV sensor provides optimum ventilation based on occupancy.
- All models include air change and shutdown; "A" models also provide prepurge.
- Solid state economizer provides comfort, energy savings, reliability, air quality compliance and application flexibility in heating, cooling and ventilating applications.
- Combines solid state enthalpy or dry bulb changeover control, minimum and maximum damper position potentiometer and DCV setpoint functions.
- Optional differential enthalpy control (enthalpy setpoint D with two C7400 sensors) provides greater economizer savings and maximum comfort over single enthalpy control by selecting the most economical air for cooling.
- Enthalpy setpoint (A-D) on economizer module controls the combination of air temperature and humidity that is suitable for free cooling.
- High-impact, glass-fiber reinforced plastic case.
- LEDs indicates when economizer is in free cooling and DCV modes.
- B models provide for input from an outdoor air quality sensor.

Approvals:

Underwriters Laboratories, Inc: Meets UL873 plenum requirements

Accessories:

4074EJM 1.2K ohm checkout resistor, 620 ohm resistor, and jumper
S963B1128 Manual Potentiometer (135 ohm)

Product Number	Input	Output	Use with Sensor	Description	Comments	Used With
W7215A1006	Discharge Air Temperature: C7150 or C7046 Sensor, Air Quality Sensor	2-10Vdc to actuator	C7232, C7150 or C7046, C7650 or C7400	Series 72 Economizer Logic Module with analog input from one Indoor Air Quality sensor (commonly Carbon Dioxide Sensor)	Economizer Logic Module operates Series 72 actuators. Can accept remote minimum position damper position potentiometer and/or analog input from one carbon dioxide sensor for indoor air.	Honeywell Series 72 actuators
W7215B1004	Discharge Air Temperature: C7150 or C7046 Sensor, Air Quality Sensor	2-10Vdc to actuator	C7232, C7150 or C7046, C7650 or C7400	Series 72 Economizer Logic Module with analog input from one indoor Air Quality sensor (commonly Carbon Dioxide Sensor) and one outdoor Air Quality sensor	Economizer Logic Module operates Series 72 actuators. Can accept remote minimum position damper position potentiometer and/or analog input from two carbon dioxide sensors for indoor and outdoor air.	Honeywell Series 72 actuators
W7460A1008	Discharge Air Temperature: C7150 or C7046 Sensor, Air Quality Sensor	Output for M7415	C7232, C7150 or C7046, C7650 or C7400	Economizer Logic Module with analog input from one indoor Air Quality sensor (commonly Carbon Dioxide Sensor) works with M7415 Damper Actuator	Economizer Logic Module operates M7415 actuators. Can accept remote minimum position damper position potentiometer and/or analog input from one carbon dioxide sensor for indoor air.	M7415 Damper Actuator
W7460B1006	Discharge Air Temperature: C7150 or C7046 Sensor, Air Quality Sensor	Output for M7415	C7232, C7150 or C7046, C7650 or C7400	Economizer Logic Module with analog input from one Air Quality sensor (commonly Carbon Dioxide Sensor) and one outdoor Air Quality sensor. Works with M7415 Damper Actuator	Economizer Logic Module operates M7415 actuators. Can accept remote minimum position damper position potentiometer and/or analog input from two carbon dioxide sensors for indoor and outdoor air.	M7415 Damper Actuator

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Economizers—Logic Modules

W7459 Solid State Economizer Logic Module



Dimensions, Approximate: 4 1/16 in. high, 2 13/16 in. wide, 1 1/4 in. deep (103 mm high, 71 mm wide, 32 mm deep)
Contact Ratings: 1.5 A Run @ 24 Vac, 3.5 A Inrush @ 24 Vac
Supply Voltage: 24 Vac
Frequency: 50 Hz, 60 Hz
Operating Temperature Range: -40 F to 125 F (-40 to 52 C)
Humidity: 5 to 95% RH, non-condensing

W7459 Solid State Economizer Logic Module are used with M7415 and M8405 Dedicated Economizer Actuators to proportion outdoor and return air dampers in economizer systems.

- Attaches to one side of actuator for proportional control of damper.
- Combines solid state changeover control, minimum damper position potentiometer and compressor staging relays.
- Use one sensor in outdoor air for single sensor control; use two sensors, one in return air and one in outdoor air, for differential control.

Approvals:
Underwriters Laboratories, Inc: Flammability Rating UL94V-5V

Accessories:
4074EJM 1.2K ohm checkout resistor, 620 ohm resistor, and jumper
S963B1128 Manual Potentiometer (135 ohm)

Product Number	Input	Output	Use with Sensor	Description	Comments	Used With
W7459A1001	Discharge Air Temperature: C7150 or C7046 Sensor	Output for M7415	C7150 or C7046, C7650 or C7400	Economizer Logic Module (works with M7415 Damper Actuators)	Economizer Logic Module. Optional remote minimum position potentiometer.	M7415 Damper Actuator
W7459A1035	Discharge Air Temperature: C7150 or C7046 Sensor	Output for M7415	C7150 or C7046, C7650 or C7400	Economizer Logic Module (works with M7415 Damper Actuators)	Economizer Logic Module. With resistor jumper to allow operation with a temp. activated switch to limit min. pos. to 50% max. open. Optional remote minimum position potentiometer.	M7415 Damper Actuator
W7459C1007	Discharge Air Temperature: T675 or T6031	Output for M7415	C7150 or C7046, C7650 or C7400	Economizer Logic Module (works with M8405 Damper Actuator)	Economizer Logic Module.	M8405 Damper Actuator
W7459D1005	Discharge Air Temperature: C7150 or C7046 Sensor	Output for M7415	C7150 or C7046, C7650 or C7400	Economizer Logic Module (works with M7415 Damper Actuators)	Economizer Logic Module. High enthalpy limit.	M7415 Damper Actuator

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W7499 Solid State Economizer Logic Module



Dimensions, Approximate: 5 in. high, 6 in. wide, 5 in. deep (103 mm high, 71.4 mm wide, 33 mm deep)
Contact Ratings: 1.5 A Run @ 30 Vac, 3.5 A Inrush @ 30Vac
Supply Voltage: 24 Vac
Frequency: 50 Hz, 60 Hz

W7459 Solid State Economizer Logic Module with M7415 Actuator to proportion outdoor and return air dampers in economizer systems.

- Combines solid state changeover control, minimum damper position potentiometer and compressor staging relays.
- Use one sensor in outdoor air for single sensor control; use two sensors, one in return air and one in outdoor air, for differential control.

Operating Temperature Range: -40 F to 125 F (-40 to 52 C)
Humidity: 5 to 95% RH, non-condensing
Approvals:
Underwriters Laboratories, Inc: Flammability Rating UL94V-5V

Product Number	Use with Sensor	Description	Comments
W7499A1003	C7150 or C7046, C7650 or C7400	W7459A1001 Economizer Logic Module with M7415A1006 Damper Actuator	Kit includes W7459A1001 Economizer Logic Module and M7415A1006 Damper Actuator

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W859 Economizer Control Packages



Contain all controls needed to operate an outdoor return air damper system, when used with an M91XX Modutrol IV Motor with internal balancing relay.

Dimensions, Approximate: 5 13/16 in. high, 4 1/8 in. wide, 3 11/32 in. deep (148 mm high, 105 mm wide, 85 mm deep)

Contact Ratings: 1 A @ 24 Vac

Supply Voltage: 24 Vac

Frequency: 50 Hz, 60 Hz

- Combines functions of proportional mixed air temperature controller, outside air changeover controller, minimum position potentiometer, and air conditioning compressor lockout in one package.
- Can be connected to the cooling thermostat to provide a totally integrated control system that locks out the economizer during the heating system.
- Used with an H205A or H705A Enthalpy Control to provide maximum economy in high humidity areas.
- Includes lead wires for remote minimum position potentiometer and remote changeover switch.
- 24 Vac power supply only.
- Mounts in place of Modutrol IV Motor cover, when used with 203977A bracket.
- Weatherproof screw-on caps prevent accidentally changing control adjustments.
- Hook provided to support device on side of Modutrol IV Motor during wiring.

Approvals:

Underwriters Laboratories, Inc: UL and CSA recognized for field wiring.

Accessories:

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

Product Number	Output	Use with Sensor	Description	Comments	Used With
W859F1005	Series 90	—	Economizer for Modutrol Motors	throttling range: 10 F (6 C). Requires 203977A bracket for mounting on Modutrol IV motor. 135 ohm mixed air temperature controller	M91XX Modutrol IV motor
W859F1013	Series 90	—	Economizer for Modutrol Motors	throttling range: 10 F (6 C) Requires 203977A bracket for mounting on Modutrol IV motor. 135 ohm mixed air temperature controller	M91XX Modutrol IV motor, and H705A1003 enthalpy control
W859F1021	Series 90	—	Economizer for Modutrol Motors	throttling range: 10 F (6 C) Requires 203977A bracket for mounting on Modutrol IV motor. 135 ohm mixed air temperature controller	M91XX Modutrol IV motor, and H705A1003 enthalpy control

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Economizer Parts and Accessories

OS Number	Description	Used With
138823	Knob for H205	H205
4074EJM	1.2K ohm checkout resistor, 620 ohm resistor, and jumper	Resistor Kit for W7459, W6215, W7215 or W7460
4074EJQ	Board for panel mounting W7459A	Resistor kit for W7459, W7459A
4074EUB	Economizer Weatherproofing Kit for W859	W7459A, W859F
4074EHB	Terminal Block	W859F, M7405, W7405
Q709A1005	Minimum Position Potentiometer	W7405

Economizers—Motors

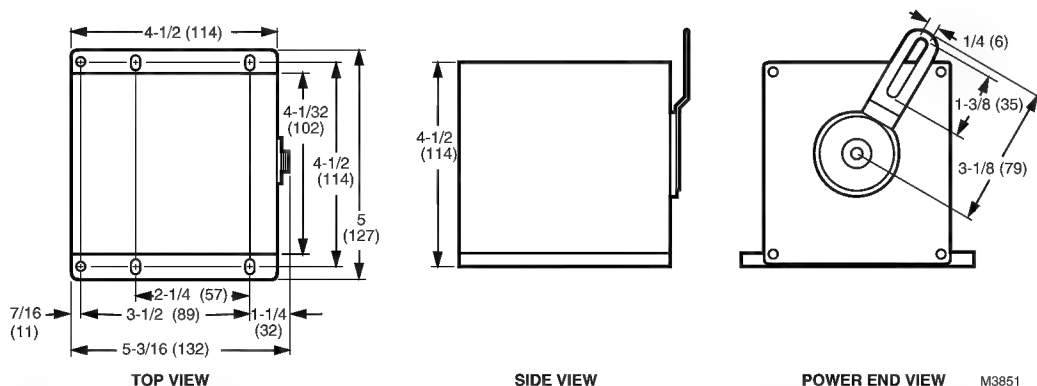
M6415; M7215; M7415; M8405; M8415 Economizer Damper Actuators



Spring return, 25 lb.-in. damper actuators provide spdt floating, two-position, three-position or modulating control of economizer systems, ventilation dampers and combustion air dampers. M6415 suitable for use with direct digital control (DDC) systems.

- Synchronous motor.
- Spring returns motor shaft to normal position on power interruption.
- Single ended drive shaft with crank arm supplied.
- Uses Q298B Linkage.

Dimension Diagrams



Electrical Connections: quick-connect terminals

External Auxiliary Switches Available: Yes

Fixed Stroke: Yes

Fail Safe Mode: Spring Return

Deadweight Load on Shaft (Power End): 15 lbs max

Humidity Ratings: 5 to 95% RH, non-condensing

Housing Material: UL94-5V plastic housing

Mounting Type: Foot mounted

Ambient Temperature Range: -25 F to +125 F (-32 C to +52 C)

Operating Temperature Range: - (-32 C to +52 C) 25 F to +125 F

Maximum Spring Return (seconds): 18 sec

Run Time Maximum: 90 sec

Timing Minimum (sec): 90 sec

Timing Opening: 90 sec

Vibration : V2 level

Weight: 3 lbs

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX2

Product Number	Control Signal	Feedback	Power Consumption		Rated Torque		Rotation to Open	Used With	Comments
			Driving	Holding	(lb-in.)	(Nm)			
M6415A1016	Floating, SPDT	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CCW	—	—
M6415B1014	Floating, SPDT	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CW	—	—
M7215A1008	2-10 Vdc	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CCW	W7212/13/14 Economizers	—
M7215A1016	2-10 Vdc	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CCW	W7212/13/14 Economizers	With captive mounting nuts
M7415A1006	Thermistor Modulating	No	8 VA	5 VA	25 lb-in.	2.8 Nm	CCW	W7460 Economizers, W7459 Economizers	—
M7415A1089	Thermistor Modulating	No	8 VA	5 VA	25 lb-in.	2.8 Nm	CCW	W7460 Economizers W7459 Economizers	With captive mounting nuts
M7415B1004	Thermistor Modulating	No	8 VA	5 VA	25 lb-in.	2.8 Nm	CW	W7460 Economizers W7459 Economizers	—
M8405A1006	Three position	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CCW	—	—
M8415A1004	Two position, SPST	No	8 VA	3 VA	25 lb-in.	2.8 Nm	CCW	—	—

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Q769 Signal Adapters



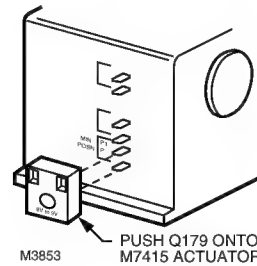
Q769 Adapter is used to provide a modulating signal to the Economizer Damper Motors when used with a controller.

Dimensions, Approximate: 1 3/8 in. high, 1 3/8 in. wide, 11/16 in. deep (35 mm high, 35 mm wide, 17 mm deep)

Electrical Connections: quick-connect terminals

Ambient Temperature Range: -25 F to +125 F (-32 C to +52 C)

Using the Q769 Adapter with the M7415 Actuator



Product Number	Control Signal	Used With
Q769A1009	6 to 9 Vdc	M7415
Q769B1008	4 to 20 mA	M7415
Q769C1007	0 to 10 Vdc	M7415

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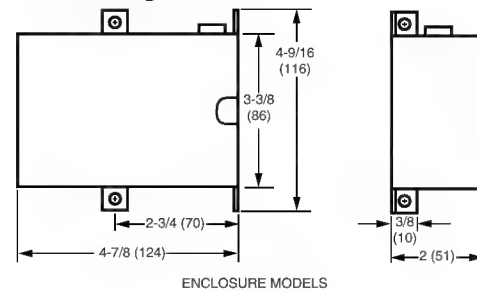
Q7002 Interface Modules



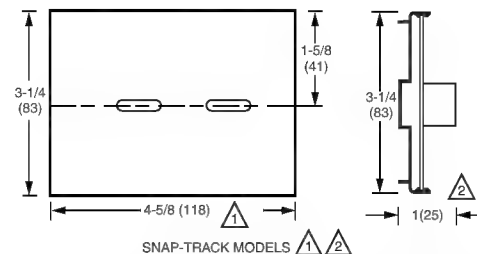
The **Q7002 interface modules** allow controllers with an otherwise incompatible signal to control an Economizer Logic Module or Direct Coupled Actuator.

- Available with either enclosure or snap-track mount.
- 24 Vac or 24 Vdc power.
- Available for input signals: W7100 or W973 Economizer; dc voltage, current, or resistive; pulse-width modulation (PWM).
- Available to provide output: spdt relay to an Economizer Logic Module (for example: W6215, W7215, and W7460); analog voltage or current for an actuator.
- Includes LED indication of relay status.
- Inputs and outputs are jumper-selectable and include adjustable zero and span.
- Output is jumper-selectable direct- or reverse-acting.
- Includes reference voltage and current to power an input device or sensor.
- PWM time base is user-selectable with positive or negative input reference; all ranges have 255-step resolution.
- Six-hour memory.
- Multiplex mode enables one PWM signal from a Building Automation System (BAS) controller to address and control up to eight interface modules.

Dimension Diagrams



ENCLOSURE MODELS



SNAP-TRACK MODELS

- △ THE Q7002A SNAP-TRACK MEASURES 3-1/2 (89) ON THIS DIMENSION.
 △ THE Q7002A SNAP-TRACK MEASURES 1-3/8 (35) ON THIS DIMENSION.
 M13266

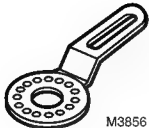
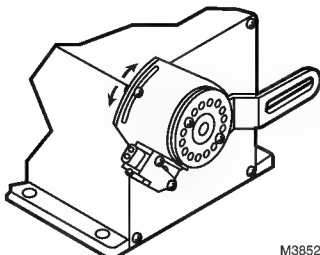
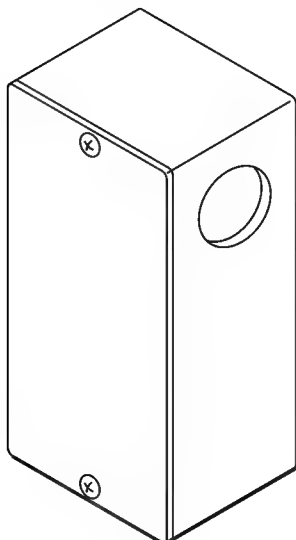
Frequency: 60 Hz

Product Number	Mounting	Output Burden	Comments	Used With
Q7002A1001	Enclosure (NEMA 1) with mounting tabs	—	Input: Elect. Series 90 Economizer Signal from a W7100 or W973, Output: SPDT switch	W6215, W7215, W7459 Economizer Logic Module
Q7002A1019	Snap-track	—	Input: Elect. Series 90 Economizer Signal from a W7100 or W973, Output: SPDT switch	W6215, W7215, W7459 Economizer Logic Module
Q7002B1009	Enclosure (NEMA 1) with mounting tabs	0 to 10 Vdc > 500 Ohm, 0 to 20 mA < 500 ohm	Input: dc voltage, current, or resistive, Output: voltage or current output	Direct coupled Actuators and modutrol motors
Q7002B1017	Snap-track	0 to 10 Vdc > 500 Ohm, 0 to 20 mA < 500 ohm	Input: dc voltage, current, or resistive, Output: voltage or current output	Direct coupled Actuators and modutrol motors
Q7002C1007	Enclosure (NEMA 1) with mounting tabs	0 to 10 Vdc > 500 Ohm, 0 to 20 mA < 500 ohm	Input: PWM signal, Output: analog voltage	Direct coupled Actuators and modutrol motors
Q7002C1015	Snap-track	0 to 10 Vdc > 500 Ohm, 0 to 20 mA < 500 ohm	Input: PWM signal, Output: analog voltage	Direct coupled Actuators and modutrol motors

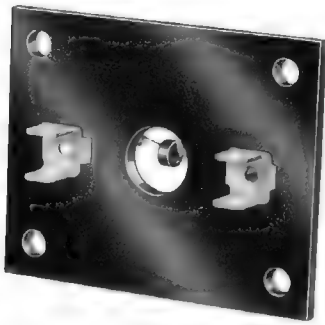
* TRADELINE models • SUPER TRADELINE models

Economizers—Motors

Economizer Motor Accessories

OS Number	Description	Used With	
203977A	Economizer Adapter Kit	W7459 Economizers, Modutrol® Motors	
4074EGR	Crank arm assembly.	M6415, M7215, M7415, M8405, M8415	 M3856
4074EKV	24 Vac Auxiliary switch which provides switching capability for controlling auxiliary equipment	M6415, M7215, M7415, M8405, M8415	 M3852
7640QF	Terminal Enclosure which provides wiring enclosure for electrical connections	M6415, M7215, M7415, M8405, M8415	 7640 QF M11519

C7150 Mixed Air Sensor



C7150 Mixed Air Sensor is used with M7145 or M8405 dedicated economizer Actuators, to proportion outdoor and return air dampers in economizer systems.

- Uses thermistor sensing element in ventilation duct systems.
- Negative temperature coefficient (NTC) causes resistance to decrease as sampled air temperature increases. Resistance change used as in input to control W973 and M7415.
- Requires no settings or calibration.
- Mounts on duct surface with four screws (not supplied).

Application: Temperature Mixed Air

Dimensions (in.): 2 in. high, 2 1/2 in. wide, 3/4 in. deep
(51 mm high, 64 mm wide)

Operating Temperature Range: 40 F to 110 F (4 C to 43 C)

Product Number	Application Type	Sensor Type	Used With
C7150B1004	Duct mixed or discharge air	3000 ohms @ 25C NTC	W973 and M7415, W7210, W7212/13/14, W7215, W7459, W7460
* TRADELINE models • SUPER TRADELINE models			

C7400 Enthalpy Sensor



C7400 Solid State Enthalpy Sensor is used with M7415 and M8405 Dedicated Economizer Actuators to proportion outdoor and return air dampers in economizer systems.

- C7400 solid state elements sense enthalpy (temperature and humidity); use two sensors for differential control, maximizing energy savings.
- Use one sensor in outdoor air for single sensor control; use two sensors, one in return air and one in outdoor air, for differential control.
- C7400 mount in any position up to 200 ft (61 m) away from W7459.
- UL94-5V enclosure.

Application: Enthalpy economizing

Dimensions (in.): 3 5/32 in. high, 3 7/8 in. wide, 1 in. deep
(80 mm high, 98 mm wide, 25 mm deep)

Operating Temperature Range: -25 F to 125 F (-32 C to 52 C)

Accessories:

4074EJM 1.2K ohm checkout resistor, 620 ohm resistor, and jumper

4074EJQ Board for panel mounting W7459A

S963B1128 Manual Potentiometer (135 ohm)

Product Number	Application Type	Sensor Type	Commonly Used With	Comments
C7400A1004	Duct outside (supply) or return	4-20 mA output	W7210, W7212/13/14, W7215, W7459, W7460	Two 1/4 in. quick-connect terminals
* TRADELINE models • SUPER TRADELINE models				

C7650 Dry Bulb Sensor



C7650 Solid State Temperature Sensor is used with M7415 and M8405 Dedicated Economizer Actuators to proportion outdoor and return air dampers in economizer systems.

- C7650 solid state element senses temperature.
- Use one sensor in outdoor air for single sensor control; use two sensors, one in return air and one in outdoor air, for differential control.
- C7650 mount in any position up to 200 ft (61 m) away from W7459.
- UL94-5V enclosure.

Application: Temperature economizing
Dimensions (in.): 3 5/32 in. high, 3 7/8 in. wide, 1 in. deep
(80 mm high, 98 mm wide, 25 mm deep)
Operating Temperature Range: 40 F to 100 F (4 C to 38 C)

Accessories:
4074EJM 1.2K ohm checkout resistor, 620 ohm resistor, and jumper
4074EJQ Board for panel mounting W7459A
S963B1128 Manual Potentiometer (135 ohm)

Product Number	Application Type	Sensor Type	Commonly Used With	Comments
C7650A1001	Duct outside (supply) or return	10-20 mA inversely proportional	W7459, W7210, W7212/13/14, W7215, W7460.	Two 1/4 in. quick-connect terminals
* TRADELINE models • SUPER TRADELINE models				

Q100 Linkage



Contains necessary hardware to link Modutrol® motors to a V51B Butterfly Valve.

- Compatible with Modutrol III and Modutrol IV™ motors. (Requires adapter bracket, which is standard on all Modutrol IV motors included in this catalog unless otherwise noted.)
- Adaptable for all sizes of V51B Valves.
- Strain release and stop bracket are provided with V51B.

Linkage Type: Valve

Product Number	Use with Actuator	Description
Q100A1015	Modutrol Motor	Linkage for 2 1/2 and 3 in. butterfly valves
Q100A1023	Modutrol Motor	Linkage for 4 in. butterfly valves

* TRADELINE models • SUPER TRADELINE models

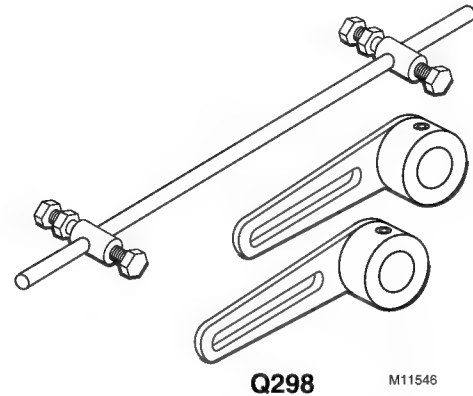
Q298 Damper Linkage for Economizer Motors



Connects M833, M835, M836 or M7415 motor to 1 or 2 zone dampers.

- May be used to link shafts of two dampers together.
- Includes pushrod, ball joints and bushings for 1/4 in. (6 mm) to 1/2 in. (13 mm) diameter shafts.

Linkage Type: Damper

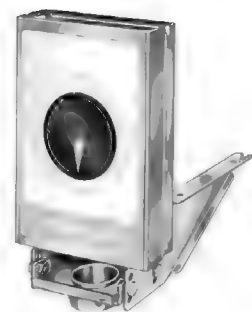


Product Number	Use with Actuator	Description	Includes
Q298B1065	Damper Actuator (M6415, M7405, M7415, M8415)	Damper Linkage	Pushrod in variable lengths, 2 damper arms, and 2 ball joints

* TRADELINE models • SUPER TRADELINE models

Linkages, Damper and Valve

Q5001 Valve Linkage for Modutrol IV Motors



The Q5001 Valve Linkage connects a Modutrol® Motor to a 2- or 3-way valve. It is used primarily on V5011 or V5013 steam and water valves.

- Q5001 Valve Linkage is applicable to 2-Way or 3-Way valves in modulating or two-position service.
- Linkage requires no adjustment when used with Honeywell valves and Modutrol IV™ Motors.
- Q5001 Valve Linkage replaces Q601 and Q618 Valve Linkages.
- Linkage mounts directly to the valve bonnet; motor mounts to linkage bracket.
- Easy-to-read position indicator.
- Valve stem lift height cam selectable.
- Overtravel permits tight close-off without excessive motor strain.
- Available brackets make linkages adaptable to many valve bodies.
- Models available with 80 lb, 160 lb, and 320 lb stem force.
- Reversible cams on the Q5001 allow field selection of normally open or normally closed valve operation.
- All models have anti-spin.

Linkage Type: Valve

Accessories:

220829BCQ1 Barber-Colman Valve Adapter Kit

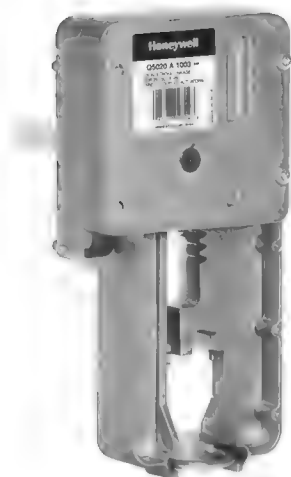
220829JCQ1 Johnson Control Valve Adapter Kit

220829LGQ1 Landis and Gyr Powers Valve Adapter Kit

	Product Number	Stroke	Use with Actuator	Comments	Includes
*	Q5001D1000	3/4 in.	Modutrol Motor	Stem force: 80 or 160 lb (356 or 712 N)	1 3/8 in. valve bracket and Anti spin clip
*	Q5001D1018	3/4 in.	Modutrol Motor	Stem force: 160 or 320 lb (712 or 1355 N)	1 3/8 in. valve bracket and Anti spin clip
*	Q5001D1026	1 1/2 in.	Modutrol Motor	Stem force: 160 or 320 lb (712 or 1355 N)	1 7/8 in. valve bracket and Anti spin clip

* TRADELINE models • SUPER TRADELINE models

Q5020 Globe Valve Linkages



The Q5020 Globe Valve Linkages connect a Honeywell direct coupled actuator (DCA) to a steam or water globe valve. The Q5020 Linkages are compatible with two-way and three-way globe valves.

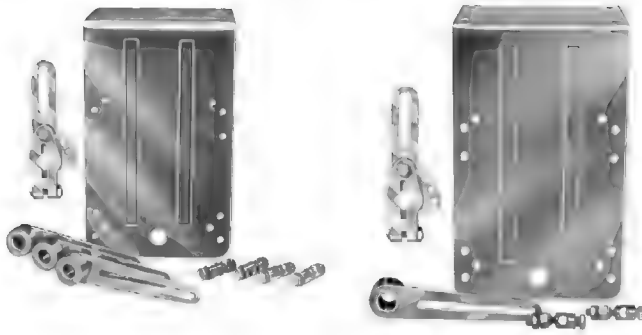
- Used with two-way and three-way globe valves in modulating or two-position service.
- Used with 25, 50, and 142 lb-in. spring return and 35, 70, 150, and 300 lb-in. non-spring return DCA.
- Quick and simple installation with no disassembly required.
- Heavy-duty Steel rack and pinion construction and Aluminum Die-cast housing.
- Maintenance-free construction.
- Precision roller-bearing rack construction prevents premature valve packing wear and leakage.
- Flexible actuator mounting orientation.
- Adjustable manual override lever and valve position indicator.
- Can be mounted on specific non-Honeywell valves using a 32004629 Bonnet Adapter Kit.

Linkage Type: Valve

	Product Number	Bonnet Size (inch)	Shaft Dimensions (inch)	Stroke	Use with Actuator	Description	Used With	Includes
	Q5020A1003	1 3/8 in.	1/2 inch	3/4 in.	Direct Coupled Actuator	Globe Valve Linkage	V5011G, V5011F, V5013N, V5011N	1/2 in. diameter drive shaft
	Q5020B1001	1 3/8 in.	1 inch	3/4 in.	Direct Coupled Actuator	Globe Valve Linkage	V5011G, V5011F, V5013N, V5011N	1 in. diameter drive shaft
	Q5020C1009	1 3/8 in.	1 inch	1 1/2 in.	Direct Coupled Actuator	Cage Valve Linkage (V5051)	V5051	1 in. diameter drive shaft
	Q5020D1007	1 3/8 in.	1/2 inch	1/2 in.	Direct Coupled Actuator	Globe Valve Linkage (for Johnson, Seimens, and Seibe Valves)	Siebe valves, Johnson valves, Siemms valves	1/2 in. diameter drive shaft

* TRADELINE models • SUPER TRADELINE models

Q605 Damper Linkage



Connect Modutrol® motor to standard damper or set of dampers to provide control of duct airflow.

- Adjustable to any degree of damper opening.
- Include ball joints, motor crank arm and damper arm for 1/2 in. (13 mm) diameter shaft.
- 27520 pushrod must be ordered separately.

Linkage Type: Damper

Mounting: External

Accessories:

26026G Damper crank arm for 1/2 in. shaft. Elongated slot for linkage connection. Slot scaled for 40-50-60-75-90.

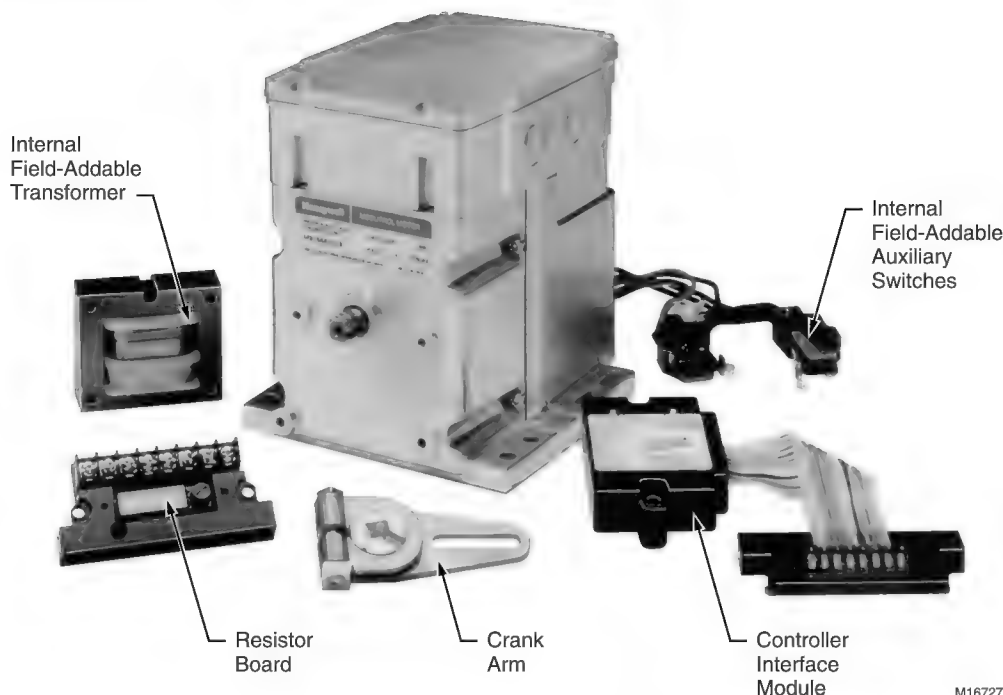
	Product Number	Use with Actuator	Description	Includes
*	Q605A1070	Modutrol Motor	Damper Linkage	Motor bracket, damper arm, motor crankarm, and 2 ball joints
*	Q605D1051	Modutrol Motor	Damper Linkage	Motor bracket, 3 damper arms, motor crankarm, and 4 ball joints
•	Q605D1069	Modutrol Motor	Damper Linkage	Motor bracket, 3 damper arms, motor crankarm, 4 ball joints, left hand drive ear and crankarm adapter
*	Q605E1050	Modutrol Motor	Damper Linkage	Damper arm, motor crankarm, and 2 ball joints
*	Q605F1018	Modutrol Motor	Damper Linkage	Motor bracket, damper arm, motor crankarm, and 2 ball joints
	Q605G1009	Modutrol Motor	Damper Linkage	Motor bracket, damper arm, motor crankarm, and 2 ball joints
	Q605H1016	Modutrol Motor	Damper Linkage	Motor bracket, 3 damper arms, motor crankarm, and 4 ball joints
•	Q605H1024	Modutrol Motor	Damper Linkage	Motor bracket, 3 damper arms, motor crankarm, 4 ball joints, left hand drive ear and crankarm adapter
*	Q605J1013	Modutrol Motor	Damper Linkage	Damper arm, motor crankarm, and 2 ball joints
* TRADELINE models • SUPER TRADELINE models				

Q5001 parts

OS Number	Description	Used With
220874/0767	9/16" anti spin clip for Q5001	Q5001
206327	Mounting Nut, 1 1/4 in.	Q5001
206328	Mounting Nut, 1 in.	Q5001

Foot-Mounted Motors

Modutrol IV Family of Motors “Contractor-Friendly” design for service and retrofit



M16727

Modutrol IV Motors replace all present generation Modutrol motors and set a new, certifiable standard for the industry. Modutrol IV Motors retain all the features that made Honeywell Modutrol motors the most reliable produced, and go even further with 20 quality improvements.

TRADELINE models provide these features and benefits:

- 1. Dual shafts.** Both drive and auxiliary shafts have equal torque ratings, allowing auxiliary shaft to drive full torque loads. This provides a more flexible motor. For example, a spring-return, normally closed motor will provide normally open operation simply by using the auxiliary shaft.
- 2. NEMA 3 housing.** Modutrol IV motor housings protect the motor from driving rain if motor is mounted in the upright position (as shown in above photo). May be mounted outdoors without a weatherproofing kit.
- 3. Higher holding torques.** Holding torques have been increased by 35-100%. More reliable performance on the job. Greatly reduced likelihood of “dithering” once motor has stabilized in position.
- 4. Improved spring return drive torque.** Rating increased from 50 lb-in. to 60 lb-in. for the high torque M9185 style motor (old M945/955 motor).
- 5. Reduced power consumption.** Motor power needs can always be satisfied with a 40 VA transformer.
- 6. Internal quality improvements.** Result in improved performance and longer life. These significant quality improvements include:
 - **Common Bore Motor precisely aligns bearings, end caps, stator and rotor for increased performance and reliability.**
 - **One Piece Stator provides greater durability plus improved efficiency.**
 - **Stronger Gear Train, the most reliable in the industry.**
 - **Die-Cast Housing with tongue and groove seal design provides superior oil-seal integrity.**
 - Plus significant improvements in the drive shaft, terminal block, and more.

A total of more than 20 improvements have gone into the design and manufacture of Modutrol IV Motors—The Performers.

Fourteen TRADELINE motors and appropriate accessories can be configured to replace all previous Honeywell Modutrol motors, as well as most OEM modutrol motors. The TRADELINE motors are:



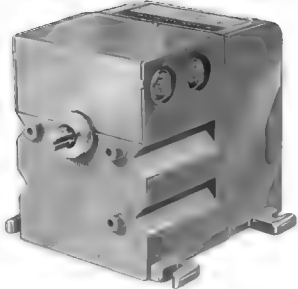
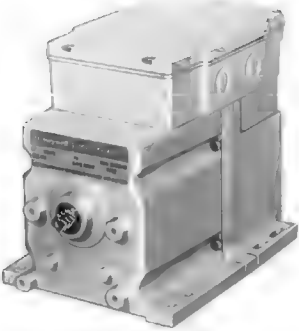

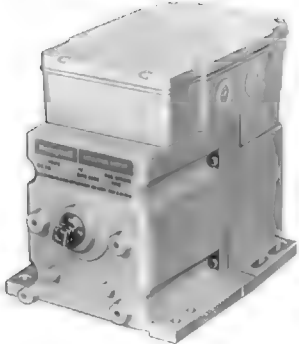
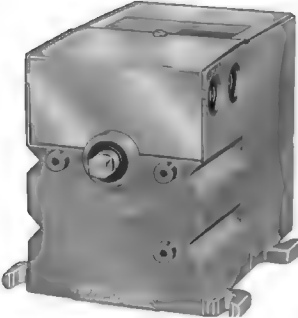
M6184D1035	M9174D1007	M6285A1005
M6194D1017	M9184D1013	M6285A1013
M6284D1000	M9184D1021	M9175D1014
M6294D1008	M9194D1003	M9185D1004
M9164D1009	M8185D1006	

The appropriate accessories are listed in Parts and Accessories, a table near the end of this section of the catalog.



Modutrol IV Family of Motors

The following Modutrol IV motors can replace the old style Modutrol motors as shown below.

	New Mod IV Replacement	Old Motors Replaced
Non-Spring Return	<div> M6184 M7384 M6194 M7964 M6284 M7984 M6294 M9164 M7164 M9174 M7274 M9184 M7284 M9194 M7294 M9484 M7364 M9494 </div> 	<div> M644 M744 M941 M944 M954 </div>  <div> M734 M934 </div> 
High Torque Spring Return	<div> M4185 M7286 M4186 M7385 M6285 M7685 M6286 M8185 M7185 M9185 M7186 M9186 M7285 </div> 	<div> M445 M745 M845 M945 M955 </div> 
Medium Torque Spring Return	<div> M7975 M9175 </div> 	<div> M765 M865 M965 M975 </div> 

Foot-Mounted Motors

The Honeywell Family of Modutrol IV Foot-Mounted Actuators

*TRADELINE models.

Actuator	Voltage Vac					Stroke	Timing	Control Input				Torque (lb-in.)							Spring Return	Recommended Controller
	24 ^a	120	208	220	240			On/Off	Spdt Floating	Modulating	Thermistor	25	35	50	60	75	150	300		
M4185A1001		●				160	60	●							●				●	T775; T4031
M4185B1009		●				160	60	●							●				●	T775; T4031
M4185B1017		●	●		●	160	60	●							●				●	T775; W7080
M4185B1058		●	●		●	90	30	●							●				●	T775; T4031
M6184A1015	●					90	30		●								●			T775; T7075; T675; T678; T6031
M6184A1023		●				160	30		●							●				T775; T7075; T675; T678; T6031
M6184D1001	●					90-160	15-30		●							●				T775; T7075; T675; T678; T6031
*M6184D1035	●					90-160	30-60		●								●			T775; T7075; T675; T678; T6031
M6184D1068	●					90-160	120-240		●								●			T775; T7075; T675; T678; T6031
M6184F1014	●					90-160	30-60		●								●			T775; T7075; T675; T678; T6031
*M6194B1011	●					90	60		●									●		T775; T7075; T675; T678; T6031
*M6194D1017	●					90-160	120-240		●									●		T775; T7075; T675; T678; T6031
M6194E1006	●					90-160	120-240		●									●		T775; T7075; T675; T678; T6031
M6284A1048		●				160	60		●								●			T775; T7075; T675; T678; T6031
M6284A1055		●				90	30		●								●			T775; T7075; T675; T678; T6031
*M6284D1000	●					90-160	30-60		●									●		T775; T7075; T675; T678; T6031
M6284F1013	●					90-160	30-60		●								●			T775; T7075; T675; T678; T6031
*M6285A1005	●					160	60		●						●				●	T775; T7075; T675; T678; T6031
*M6285A1013	●					90	30		●						●				●	T775; T7075; T675; T678; T6031
M6285C1001	●					160	60		●						●				●	T775; T7075; T675; T678; T6031
M6286G1001	●					160	60		●						●				●	T775; T7075; T675; T678; T6031
*M6294D1008	●					90-160	120-240		●									●		T775; T7075; T675; T678; T6031
M7164A1017 ^b	●					90	30			10.5-13.5 Vdc			●							T775; W7080
M7164G1030 ^b		●				90	30			10.5-13.5 Vdc			●							T775; W7080
M7185A1004 ^b	●					160	60			4-7 Vdc					●				●	T775; W7080
M7284A1004 ^b		●				90	30			4-20 mA							●			T775, EXCEL 5000
M7284A1012 ^b		●				160	60			4-20 mA							●			T775, EXCEL 5000
M7284A1038 ^b		●				90	15			4-20 mA						●				T775, EXCEL 5000
M7284A1046 ^b		●				90	30			4-20 mA							●			T775, EXCEL 5000
M7284A1079 ^b	●					160	60			2-10 Vdc							●			T775, EXCEL 5000
M7284C1000 ^b		●				90	30			4-20 mA							●			T775, EXCEL 5000
M7284C1018 ^b		●				160	60			4-20 mA							●			T775, EXCEL 5000
M7284C1059	●					90	30		●	4-20 mA							●			DDC

^a All 24 Vac Modutrol motors have CE approval.

^b Available only through Honeywell Authorized Distributors.

^c Includes minimum position potentiometer.

Foot-Mounted Motors

*TRADELINE models.

Actuator	Voltage Vac					Stroke	Timing	Control Input				Torque (lb-in.)							Spring Return	Recommended Controller
	24 ^a	120	208	220	240			On/Off	Spdt Floating	Modulating	Thermistor	25	35	50	60	75	150	300		
M7284C1067	●					160	60		●	4-20 mA							●			DDC
M7284G1001 ^b	●					160	60			2-10 Vdc							●			T775, EXCEL 5000
M7284Q1009 ^b		●				90	30			4-20 mA							●			T775, EXCEL 5000
M7284Q1017 ^b		●				160	60			4-20 mA							●			T775, EXCEL 5000
M7284Q1033	●					90	30		●	4-20 mA							●			DDC
M7284Q1041	●					160	60		●	4-20 mA							●			DDC
M7285A1003 ^b		●				90	30			4-20 mA					●				●	T775, EXCEL 5000
M7285A1011 ^b		●				160	60			4-20 mA					●				●	T775, EXCEL 5000
M7285A1045 ^b	●					160	60			2-10 Vdc					●				●	T775, EXCEL 5000
M7285C1009 ^b		●				90	30			4-20 mA					●				●	T775, EXCEL 5000
M7285C1017 ^b		●				160	60			4-20 mA					●				●	T775, EXCEL 5000
M7285Q1008 ^b		●				90	30			4-20 mA					●				●	T775, EXCEL 5000
M7285Q1016 ^b		●				160	60			4-20 mA					●				●	T775, EXCEL 5000
M7286G1009 ^b	●					160	60			2-10 Vdc					●				●	T775, EXCEL 5000
M7294A1010 ^b	●					160	120			2-10 Vdc								●		T775, EXCEL 5000
M7294G1009 ^b	●					160	120			2-10 Vdc								●		T775, EXCEL 5000
M7294Q1007 ^b		●				90	60			4-20 mA								●		T775, EXCEL 5000
M7685A1025 ^{b,c}	●					90	30			14-17 Vdc					●				●	T775; W7080
M7964A1001 ^b		●				90	30			—	●		●							T7047
M7964B1009 ^b		●				90	30			—	●		●							T7047
M7964B1017 ^b		●				160	60			—	●		●							T7047
M7964C1007 ^b		●				90	30			—	●		●							T7047
M7964C1015 ^b		●				90	30			—	●		●							T7047
M8185A1002	●					160	60	●							●				●	T775
*M8185D1006	●					90-160	30-60	●							●				●	T775
M9164A1005		●				90	30			135 ohm			●							T775; T915; T991
M9164A1013					●	160	60			135 ohm			●							T775; T915; T991
M9164A1021		●				160	60			135 ohm			●							T775; T915; T991
M9164A1070	●					160	60			135 ohm			●							T775; T915; T991
M9164A1088				●		160	60			135 ohm			●							T775; T915; T991
M9164A1120	●					90	30			135 ohm			●							T775; T915; T991
M9164C1001	●					160	60			135 ohm			●							T775; T915; T991
M9164C1050		●				160	60			135 ohm			●							T775; T915; T991
M9164C1068		●				90	30			135 ohm			●							T775; T915; T991
*M9164D1009	●					90-160	30-60			135 ohm			●							T775; T915; T991
M9174B1027		●				90	30			135 ohm						●				T775; T915; T991
M9174B1043		●				160	60			135 ohm						●				T775; T915; T991
M9174C1025		●				90	30			135 ohm						●				T775; T915; T991
M9174C1033		●				160	60			135 ohm						●				T775; T915; T991
*M9174D1007	●					90-160	30-60			135 ohm						●				T775; T915; T991
M9175D1006		●				90-160	30-60			135 ohm		●							●	T775; T915; T991
*M9175D1014	●					90-160	30-60			135 ohm		●							●	T775; T915; T991
M9184A1019	●					160	60			135 ohm							●			T775; T915; T991
M9184A1035	●					90	30			135 ohm							●			T775; T915; T991
M9184C1031	●					90	30			135 ohm							●			T775; T915; T991
M9184D1005	●					90-160	15-30			135 ohm						●				T775; T915; T991
*M9184D1013	●					90-160	30-60			135 ohm							●			T775; T915; T991

^a All 24 Vac Modutrol motors have CE approval.

^b Available only through Honeywell Authorized Distributors.

^c Includes minimum position potentiometer.

Foot-Mounted Motors

*TRADELINE models.

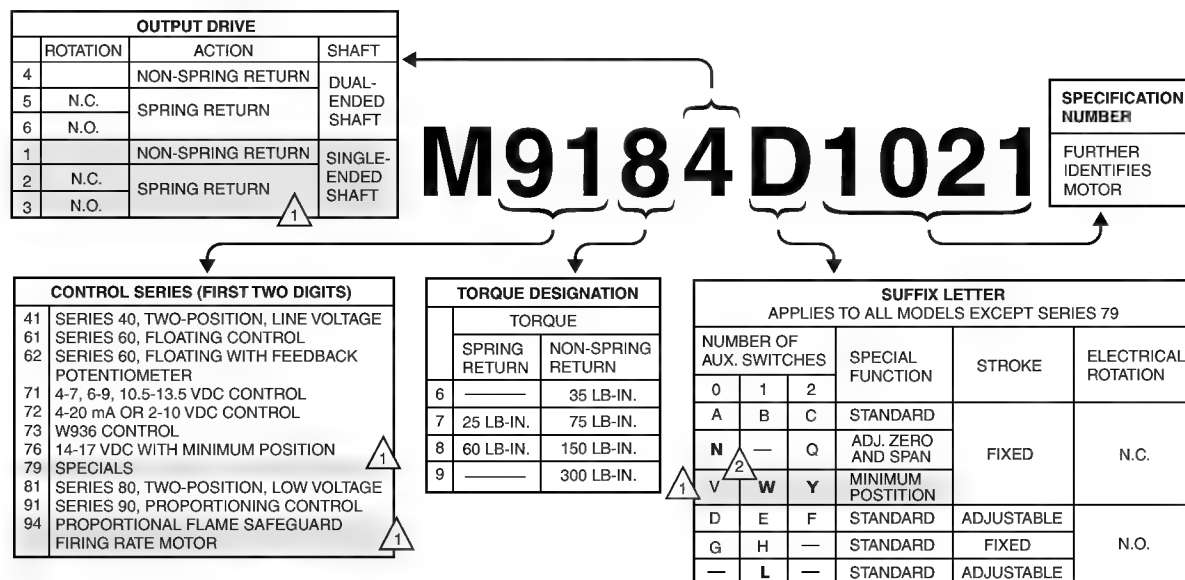
Actuator	Voltage Vac					Stroke	Timing	Control Input				Torque (lb-in.)							Spring Return	Recommended Controller
	24 ^a	120	208	220	240			On/Off	Spdt Floating	Modulating	Thermistor	25	35	50	60	75	150	300		
*M9184D1021	●					90-160	30-60			135 ohm							●			T775; T915; T991
M9184F1000	●					90-160	30-60			135 ohm							●			T775; T915; T991
M9184F1034	●					90-160	30-60			135 ohm							●			T775; T915; T991
M9185A1018	●					160	60			135 ohm					●				●	T775; T915; T991
M9185A1026	●					90	30			135 ohm					●				●	T775; T915; T991
M9185C1006	●					160	60			135 ohm					●				●	T775; T915; T991
*M9185D1004	●					90-160	30-60			135 ohm					●				●	T775; T915; T991
M9185E1019	●					90-160	30-60			135 ohm					●				●	T775; T915; T991
M9186G1006	●					160	60			135 ohm					●				●	T775; T915; T991
*M9194D1003	●					90-160	120-240			135 ohm								●		T775; T915; T991
M9194E1000	●					90-160	120-240			135 ohm								●		T775; T915; T991

^a All 24 Vac Modutrol motors have CE approval.

^b Available only through Honeywell Authorized Distributors.

^c Includes minimum position potentiometer.

Modutrol IV Motor Order Number Guide



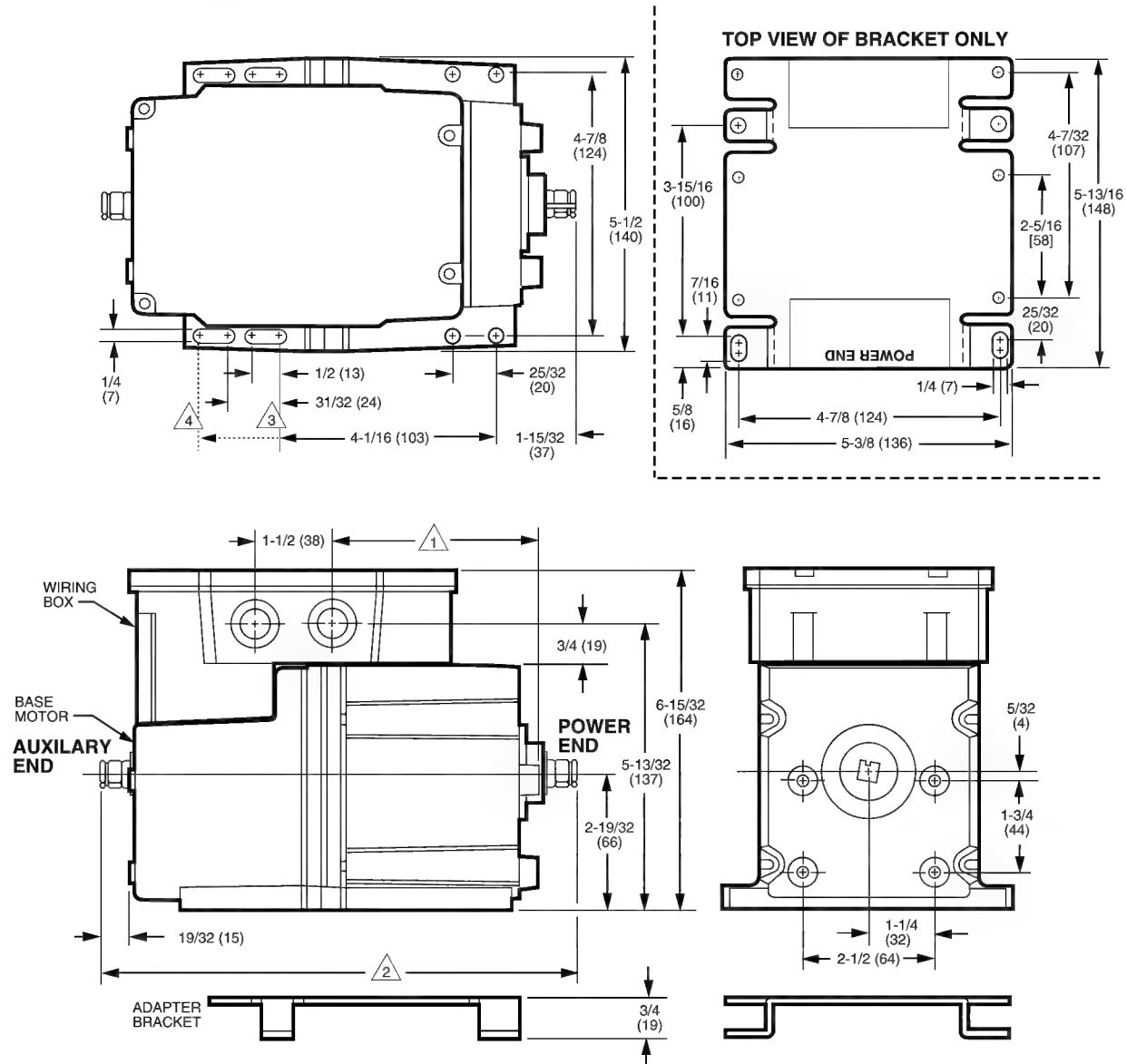
1 MODEL NUMBERS IN SHADED AREAS ARE AVAILABLE SPECIAL ORDER ONLY. CONTACT YOUR HONEYWELL SALES REPRESENTATIVE.

2 SUFFIX LETTERS IN BOLD ARE OBSOLETE.

M17507

Foot-Mounted Modutrol IV™ Motors

Dimension Diagrams



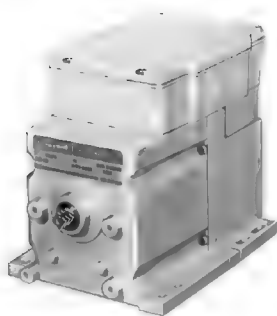
SPRING RETURN MODEL SHOWN

- 1 FOR SPRING RETURN MODELS 3-29/32 (98); FOR NON-SPRING RETURN MODELS 2-13/32 (61).
- 2 FOR SPRING RETURN MODELS 8-3/4 (223); FOR NON-SPRING RETURN MODELS 7-5/16 (185).
- 3 FOR SPRING RETURN MODELS.
- 4 FOR NON-SPRING RETURN MODELS.

M451E

Foot-Mounted Motors

M4185; M8185 Two-Position Modutrol IV™ Motors



- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Dimension Diagram

See diagram on page 441

Control Signal: Two position, SPST

External Auxiliary Switches Available: Yes

Fail Safe Mode: Spring Return

Feedback: No

Fixed Stroke: Yes

Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX2

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

40 VA pilot duty, 120/240 Vac on opposite contact

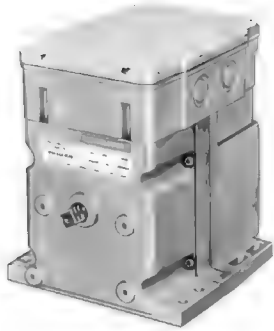
Two-position, spring return motors used to operate dampers and valves.

- Used to operate dampers and valves in applications where it is necessary or desirable to have the controlled element return to the starting position in the event of power failure or interruption.
- Replace M445A,D; M845A,C,E; and M865B motors.
- Available with factory-installed transformers, or an internal transformer can be added in the field.
- Oil-immersed motor and gear train provide reliable performance and long life.
- Provide NEMA 3 weather protection with wiring box, when mounted upright.
- Electrically normally closed (at closed position when control signal is at minimum level) and rotate clockwise to open with a signal increase.
- Integral helical spring that returns the motor shaft to the normal position (fully closed for M4185 and M8185; fully open for M4186) on power interruption.

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Adapter Bracket Included
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M4185A1001	—	30	120	60 lb-in.	6.8 Nm	160	—	60	—	No
M4185B1009	1	30	120	60 lb-in.	6.8 Nm	160	—	60	—	No
M4185B1017	1	30	120/208/240	60 lb-in.	6.8 Nm	160	—	60	—	No
M4185B1058	1	30	120/208/240	60 lb-in.	6.8 Nm	90	—	30	—	No
M8185A1002	—	21	24	60 lb-in.	6.8 Nm	160	—	60	—	No
M8185A1010	—	21	24	60 lb-in.	6.8 Nm	160	—	60	—	No
M8185D1006	—	21	24	60 lb-in.	6.8 Nm	160	90	60	30	220738A Adapter Bracket

* TRADELINE models • SUPER TRADELINE models

M6184; M6194 Floating Modutrol IV™ Motors



Dimension Diagrams
See diagram on page 441

Control Signal: Floating
External Auxiliary Switches Available: Yes
Fail Safe Mode: Non-Spring Return
Feedback: No
Fixed Stroke: Yes
Motor Shafts: 2
Shaft Dimensions: 0.375 (10)
Shaft Shape: square
Deadweight Load (Combined on both Shafts): 300 lbs.
Deadweight Load on Shaft (Either End): 200 lbs.
Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Reversing, three-wire spdt or floating control motors used to operate dampers and valves.

- Replace M644-A-E motors.
- Available with fixed or adjustable stroke.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX2
Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

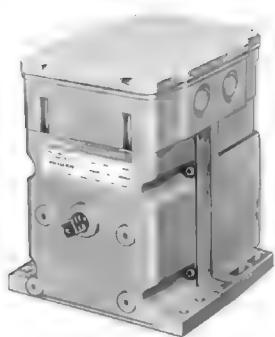
40 VA pilot duty, 120/240 Vac on opposite contact

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Adapter Bracket Included
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M6184A1015	—	17	24	150 lb-in.	17 Nm	90	—	30	—	No
M6184A1023	—	26	120	75 lb-in.	8.5 Nm	160	—	30	—	No
M6184D1001	—	17	24	75 lb-in.	8.5 Nm	160	90	30	15	No
* M6184D1035	—	17	24	150 lb-in.	17 Nm	160	90	60	30	220738A Adapter Bracket
M6184D1068	—	13	24	150 lb-in.	17 Nm	160	90	240	120	No
M6184F1014	2	17	24	150 lb-in.	17 Nm	160	90	60	30	No
* M6194B1011	1	17	24	300 lb-in.	34 Nm	90	—	60	—	No
M6194D1017	—	17	24	300 lb-in.	34 Nm	160	90	240	120	220738A Adapter Bracket
M6194E1006	1	17	24	300 lb-in.	34 Nm	160	90	240	120	No

* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

M6284; M6294 Floating Modutrol IV™ Motors



Dimension Diagrams
See diagram on page 441

Control Signal: Floating
External Auxiliary Switches Available: Yes
Fail Safe Mode: Non-Spring Return
Feedback: Yes
Fixed Stroke: Yes
Mounting: Motor Shafts: 2
Shaft Dimensions: 0.375 (10)
Shaft Shape: square
Deadweight Load (Combined on both Shafts): 300 lbs.
Deadweight Load on Shaft (Either End): 200 lbs.
Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)
Frequency: 50 Hz, 60 Hz

Reversing, three-wire floating-control motors with feedback potentiometer. Used with controllers that provide a spdt output to operate dampers and valves.

- Replace M944B,E,G,S motors.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX
Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

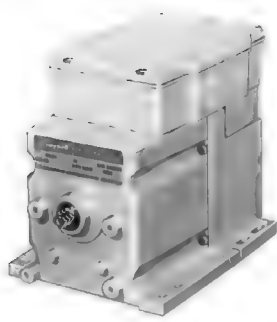
At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

40 VA pilot duty, 120/240 Vac on opposite contact

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Adapter Bracket Included
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M6284A1048	—	26	120	150 lb-in.	17 Nm	160	—	60	—	No
M6284A1055	—	26	120	150 lb-in.	17 Nm	90	—	30	—	No
* M6284D1000	—	17	24	150 lb-in.	17 Nm	160	90	60	30	220738A Adapter Bracket
M6284F1013	2	17	24	150 lb-in.	17 Nm	160	90	60	30	No
* M6294D1008	—	17	24	300 lb-in.	34 Nm	160	90	240	120	220738A Adapter Bracket

* TRADELINE models • SUPER TRADELINE models

M6285; M6286 Floating Modutrol IV™ Motors



Dimension Diagrams
See diagram on page 441

Control Signal: Floating
External Auxiliary Switches Available: Yes
Fail Safe Mode: Spring Return
Feedback: Yes
Fixed Stroke: Yes
Motor Shafts: 2
Shaft Dimensions: 0.375 (10)
Shaft Shape: square
Deadweight Load (Combined on both Shafts): 300 lbs.
Deadweight Load on Shaft (Either End): 200 lbs.
Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

- Spring return motors with isolated feedback potentiometer, used with spdt or floating controls to operate dampers and valves.**
- Replace M945B,C,G motors.
 - Contain integral springs that return motor shafts to normal position (full open for M6286, full closed for M6285) when power is interrupted.
 - Include electrically isolated feedback potentiometers to provide indication of shaft position.
 - Oil-immersed motor and gear train provide reliable performance and long life.
 - Include adapter brackets to match shaft height of older motors.
 - Provide NEMA 3 weather protection with wiring box, when mounted upright.
 - Factory-installed transformer models available, or an internal transformer can be added in the field.
 - Double-ended, 3/8 in. (10 mm) square crankshaft.

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX
Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

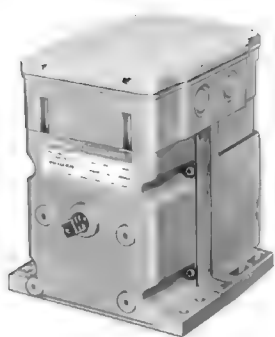
40 VA pilot duty, 120/240 Vac on opposite contact

	Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Adapter Bracket Included
					(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke		
*	M6285A1005	—	21	24	60 lb-in.	6.8 Nm	160	—	60	220738A Adapter Bracket
*	M6285A1013	—	21	24	60 lb-in.	6.8 Nm	90	—	30	220738A Adapter Bracket
	M6285C1001	2	21	24	60 lb-in.	6.8 Nm	160	—	60	No
	M6286G1001	—	21	24	60 lb-in.	6.8 Nm	160	—	60	No

* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

M7164; M7185 Modutrol IV Motors



Proportional motors used to operate dampers and valves when used with a modulating dc voltage source such as W7080 panel.

- M7164 replaces M734H,J motors; M7185 replaces M745P motors; M7186 replaces M745G motors.
- Oil-immersed motor and gear train provide reliable performance and long life.
- Provide NEMA 3 weather protection with wiring box when mounted upright.
- M7164A and M7185A are normally closed (at closed position when control signal is at a minimum) and rotate clockwise to open with a signal increase.
- M7164G, M7186G are electrically normally open (at open position when control signal is at a minimum) and rotate counterclockwise to close with a signal increase.
- M7185 and M7186 motors have a helical spring that returns the motor to the normal position on power interruption.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers. Separate transformer may be required for 24 Vac models of M7164 motors for proper system operation.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Dimension Diagrams

See diagram on page 441

External Auxiliary Switches Available: Yes

Fail Safe Mode: Non-Spring Return

Feedback: No

Fixed Stroke: Yes

Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

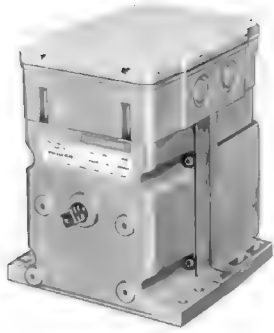
Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

Product Number	Control Signal	Power Consumpti on Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Adapter Bracket Included
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke		
M7164A1017	Modulating, 10.5-13.5 Vdc	24	24	35 lb-in.	4 Nm	90	—	30	No
M7164G1030	Modulating, 10.5-13.5 Vdc	24	120	35 lb-in.	4 Nm	90	—	30	No
M7185A1004	Modulating, 4-7 Vdc	24	24	60 lb-in.	6.8 Nm	160	—	60	No

* TRADELINE models • SUPER TRADELINE models

M7284; M7285; M7286; M7294 Modutrol IV Motors



Dimension Diagrams

See diagram on page 441

Control Signal: Modulating, 4-20 mA
External Auxiliary Switches Available: Yes
Fail Safe Mode: Non-Spring Return
Feedback: No
Fixed Stroke: Yes
Mounting: Motor Shafts: 2
Shaft Dimensions: 0.375 (10)
Shaft Shape: square
Deadweight Load (Combined on both Shafts): 300 lbs.
Deadweight Load on Shaft (Either End): 200 lbs.
Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)
Frequency: 50 Hz, 60 Hz

Proportional motors operate valves when used with a modulating 2-10 Vdc or 4-20 mA input signal, such as EXCEL 5000 system.

- Oil-immersed motor and gear train provide reliable performance and long life.
- Provide NEMA 3 weather protection with wiring box, when mounted upright.
- M7285 motors have helical springs that return motor shaft to closed position on power interruption.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Adapter Bracket Included: No

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

40 VA pilot duty, 120/240 Vac on opposite contact

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Includes
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M7284A1004	—	29	120	150 lb-in.	17 Nm	90	—	30	—	—
M7284A1012	—	29	120	150 lb-in.	17 Nm	160	—	60	—	—
M7284A1038	—	29	120	75 lb-in.	8.5 Nm	90	—	15	—	—
M7284A1046	—	29	120	150 lb-in.	17 Nm	90	—	30	—	—
M7284A1079	—	20	24	150 lb-in.	17 Nm	160	—	60	—	—
M7284C1000	2	29	120	150 lb-in.	17 Nm	90	—	30	—	—
M7284C1018	2	29	120	150 lb-in.	17 Nm	160	—	60	—	—
M7284C1059	2	29	24	150 lb-in.	17 Nm	90	—	30	—	—
M7284C1067	2	29	24	150 lb-in.	17 Nm	160	—	60	—	—
M7284G1001	—	20	24	150 lb-in.	17 Nm	160	—	60	—	—
M7284Q1009	2	29	120	150 lb-in.	17 Nm	90	—	30	—	Adjustable zero and span for split range applications
M7284Q1017	2	29	120	150 lb-in.	17 Nm	160	—	60	—	Adjustable zero and span for split range applications
M7284Q1033	2	29	24	150 lb-in.	17 Nm	90	—	30	—	Adjustable zero and span for split range applications
M7284Q1041	2	29	24	150 lb-in.	17 Nm	160	—	60	—	Adjustable zero and span for split range applications

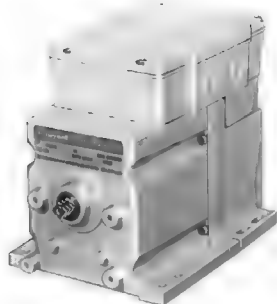
* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Includes
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M7284Q1074	2	20	24	150 lb-in.	17 Nm	90	—	30	30	—
M7285A1003	—	34	120	60 lb-in.	6.8 Nm	90	—	30	—	—
M7285A1011	—	34	120	60 lb-in.	6.8 Nm	160	—	60	—	—
M7285A1045	—	24	24	60 lb-in.	6.8 Nm	160	—	60	—	—
M7285C1009	2	34	120	60 lb-in.	6.8 Nm	90	—	30	—	—
M7285C1017	2	34	120	60 lb-in.	6.8 Nm	160	—	60	—	—
M7285Q1008	2	34	120	60 lb-in.	6.8 Nm	90	—	30	—	Adjustable zero and span for split range applications
M7285Q1016	2	34	120	60 lb-in.	6.8 Nm	160	—	60	—	Adjustable zero and span for split range applications
M7286G1009	—	24	24	60 lb-in.	6.8 Nm	160	—	60	—	—
M7294A1010	—	20	24	300 lb-in.	34 Nm	160	—	120	—	—
M7294G1009	—	20	24	300 lb-in.	34 Nm	160	—	120	—	—
M7294Q1007	2	29	120	300 lb-in.	34 Nm	90	—	60	—	Adjustable zero and span for split range applications

* TRADELINE models • SUPER TRADELINE models

M7685 Modutrol IV Motor



Proportional, spring-return motors for use with Honeywell W7080 panel 14-17 Vdc output; with minimum position adjustment.

- Replaces M745L motors.
- Oil-immersed motor and gear train provide reliable performance and long life.
- Provides NEMA 3 weather protection with wiring box, when mounted upright.
- Normally closed (at closed position when control signal is at a minimum) and rotate clockwise to open with a signal increase.
- Includes a helical spring that returns the motor to the normal position on power interruption.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Dimension Diagrams

See diagram on page 441

Control Signal: Modulating, 14-17 Vdc

External Auxiliary Switches Available: Yes

Fail Safe Mode: Spring Return

Feedback: No

Fixed Stroke: Yes

Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

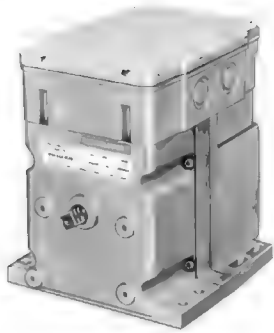
Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

Product Number	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Adapter Bracket Included	Includes
			(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M7685A1025	24	24	60 lb-in.	6.8 Nm	90	—	30	No	Minimum position potentiometer

* TRADELINE models • SUPER TRADELINE models

M7964 Modutrol IV Motors



Dimension Diagrams
See diagram on page 441

Control Signal: Thermistor
External Auxiliary Switches Available: Yes
Fail Safe Mode: Non-Spring Return
Feedback: No
Fixed Stroke: Yes
Motor Shafts: 2
Shaft Dimensions: 0.375 (10)

Proportional motors specially designed for specific controllers.

- M7964A,B,C replaces M734A,B,C Motors (for ITT Nesbitt multizone systems), and are used with T7047 thermistor-type thermostats.
- M7975E replaces M765P motors (for McDonald systems), and has a three-wire 3.5 to 6.5 Vdc input, with feedback potentiometer and integral helical spring to return shaft to normally closed position on power interruption.
- M7984N replaces M744J motors (for Despatch Industries), and has a voltage input that can be adjusted from -0.9 to 2.6 Vdc to 1.0 to 2.4 Vdc and is designed to be controlled by a voltage source with series resistance of 2740 ohms.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

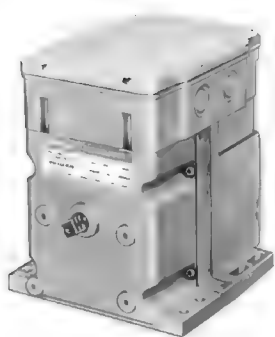
Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

Product Number	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Adapter Bracket Included	Includes
			(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
M7964A1001	24	120	35 lb-in.	4 Nm	90	—	30	220738A Adapter Bracket	CW rotation with signal increase
M7964B1009	24	120	35 lb-in.	4 Nm	90	—	30	220738A Adapter Bracket	CCW rotation with signal decrease
M7964B1017	24	120	35 lb-in.	4 Nm	160	—	60	220738A Adapter Bracket	CCW rotation with signal decrease
M7964C1007	24	120	35 lb-in.	4 Nm	90	—	30	220738A Adapter Bracket	CCW rotation with signal decrease
M7964C1015	24	120	35 lb-in.	4 Nm	90	—	30	220738A Adapter Bracket	CCW rotation with signal decrease

* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

M9164; M9174 Modutrol IV Motors



Reversing, proportional motors used to operate dampers and valves.

- Replace M934 Motors.
- Electronic drive circuit.
- Can drive up to six Modutrol motors using 4074BYK Resistor Bag Assembly or 221508A Resistor Board Kit (see Accessories section).
- Interface modules available for series 70 (electronic) control.
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage models shipped with internal transformers. Separate transformer may be required for 24V models for proper system operation.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Dimension Diagrams

See diagram on page 441

Control Signal: Proportional, 135 ohm

External Auxiliary Switches Available: Yes

Fail Safe Mode: Non-Spring Return

Feedback: No

Fixed Stroke: Yes

Mounting: Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

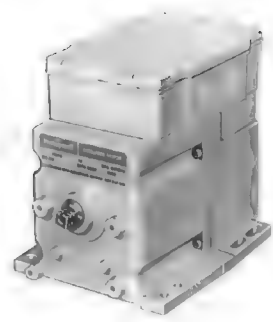
At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

40 VA pilot duty, 120/240 Vac on opposite contact

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Spring Return Timing	Timing Minimum (sec)	Adapter Bracket Included
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke				
M9164A1005	—	24	120	35 lb-in.	4 Nm	90	—	30		—	No
M9164A1013	—	24	240	35 lb-in.	4 Nm	160	—	60		—	No
M9164A1021	—	24	120	35 lb-in.	4 Nm	160	—	60		—	No
M9164A1070	—	15	24	35 lb-in.	4 Nm	160	—	60		—	No
M9164A1088	—	24	220	35 lb-in.	4 Nm	160	—	60		—	No
M9164A1120	—	15	24	35 lb-in.	4 Nm	90	—	30		—	No
M9164C1001	2	15	24	35 lb-in.	4 Nm	160	—	60		—	No
M9164C1050	2	24	120	35 lb-in.	4 Nm	160	—	60		—	No
M9164C1068	2	24	120	35 lb-in.	4 Nm	90	—	30		—	No
* M9164D1009	—	15	24	35 lb-in.	4 Nm	160	90	60		30	220738A Adapter Bracket
M9174B1027	1	27	120	75 lb-in.	8.5 Nm	90	—	30		—	No
M9174B1043	1	27	120	75 lb-in.	8.5 Nm	160	—	60		—	No
M9174C1025	2	27	120	75 lb-in.	8.5 Nm	90	—	30		—	No
M9174C1033	2	27	120	75 lb-in.	8.5 Nm	160	—	60		—	No
* M9174D1007	—	17	24	75 lb-in.	8.5 Nm	160	90	60	60	30	220738A Adapter Bracket

* TRADELINE models • SUPER TRADELINE models

M9175; M9185; M9186 Modutrol IV Motors



Dimension Diagrams

See diagram on page 441

Control Signal: Proportional, 135 ohm

External Auxiliary Switches Available: Yes

Fail Safe Mode: Spring Return

Feedback: No

Fixed Stroke: No

Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Reversing, proportional, spring-return motors used to operate dampers and valves when used in a series 90 control circuit.

- M9185, M9186 replace M945A,D,F and M955 motors; M9175 replaces M965 and M975 motors.
- Can be adapted to series 70 control with interface modules.
- Contain integral helical springs to return motor shafts to normal position (full closed for M9175 and M9185, full open for M9186) on power interruption.
- Oil-immersed motor and gear train provide reliable performance and long life.
- Provide NEMA 3 weather protection with wiring box, when mounted upright.
- Up to six Modutrol motors can be driven by one series 90 controller using 4074BYK Resistor Bag Assembly or 221508A Resistor Board (see Accessories).
- Internal actuator motor and circuitry operate from 24 Vac. Line voltage model shipped with internal transformer.
- Double-ended, 3/8 in. (10 mm) square crankshaft.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

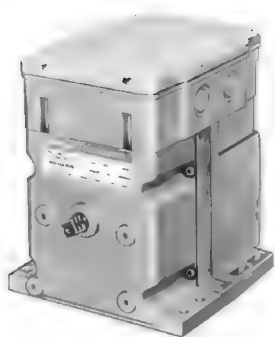
40 VA pilot duty, 120/240 Vac on opposite contact

	Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Adapter Bracket Included
					(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke			
	M9175D1006	—	32	120	25 lb-in.	2.8 Nm	160	90	60	30	No
*	M9175D1014	—	22	24	25 lb-in.	2.8 Nm	160	90	60	30	220738A Adapter Bracket
	M9185A1018	—	24	24	60 lb-in.	6.8 Nm	160	—	60	—	No
	M9185A1026	—	24	24	60 lb-in.	6.8 Nm	90	—	30	—	No
	M9185C1006	2	24	24	60 lb-in.	6.8 Nm	160	—	60	—	No
*	M9185D1004	—	24	24	60 lb-in.	6.8 Nm	160	90	60	30	220738A Adapter Bracket
	M9185E1019	1	24	24	60 lb-in.	6.8 Nm	160	90	60	30	No
	M9186G1006	—	24	24	60 lb-in.	6.8 Nm	160	—	60	—	No

* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

M9184; M9194 Modutrol IV Motors



Reversing, proportional motors used to operate dampers and valves.

- Replace M944A,C,D and M954 motors.
- Electronic drive circuit.
- Available with fixed or adjustable stroke.
- Can drive up to six Modutrol motors using 4074BYK Resistor Bag Assembly or 221508A Resistor Board Kit (see Accessories section).
- Interface modules available for series 70 (electronic) control.
- Internal actuator motor and circuitry operate from 24 Vac.
- Double-ended, 3/8 in. (10 mm) square crankshaft.
- Available with tapped (8-32) shafts for Flame Safeguard applications.

Dimension Diagrams

See diagram on page 441

Control Signal: Proportional, 135 ohm

External Auxiliary Switches Available: Yes

Fail Safe Mode: Non-Spring Return

Feedback: No

Fixed Stroke: Yes

Mounting: Motor Shafts: 2

Shaft Dimensions: 0.375 (10)

Shaft Shape: square

Deadweight Load (Combined on both Shafts): 300 lbs.

Deadweight Load on Shaft (Either End): 200 lbs.

Ambient Temperature Range: -40 F to +150 F (-40 C to +60 C)

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

CE Standard: EN55011 (Emission) EN50082-2 (Immunity) 73/23/EEC (LVD)

Auxiliary Switch Ratings: One Contact:

At Full Load		At Locked Rotor	
120 V	240 V	120 V	240 V
7.2	3.6	43.2	21.6

40 VA pilot duty, 120/240 Vac on opposite contact

Product Number	Internal Auxiliary Switch	Power Consumption Driving	Supply Voltage	Torque Ratings		Angle of Rotation		Run Time Maximum	Timing Minimum (sec)	Adapter Bracket Included	Includes
				(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke				
M9184A1019	—	20	24	150 lb-in.	17 Nm	160	—	60	—	No	—
M9184A1035	—	20	24	150 lb-in.	17 Nm	90	—	30	—	No	—
M9184C1031	2	20	24	150 lb-in.	17 Nm	90	—	30	—	No	Tapped shaft
M9184D1005	—	20	24	150 lb-in.	17 Nm	160	90	30	15	No	—
* M9184D1013	—	20	24	150 lb-in.	17 Nm	160	90	60	30	220738A Adapter Bracket	—
* M9184D1021	—	20	24	150 lb-in.	17 Nm	160	90	60	30	220738A Adapter Bracket	—
M9184F1000	2	20	24	150 lb-in.	17 Nm	160	90	60	30	No	—
M9184F1034	2	20	24	150 lb-in.	17 Nm	160	90	60	30	No	Tapped shaft
* M9194D1003	—	20	24	300 lb-in.	34 Nm	160	90	240	120	220738A Adapter Bracket	—
M9194E1000	1	20	24	300 lb-in.	34 Nm	160	90	240	120	No	—

* TRADELINE models • SUPER TRADELINE models

Modutrol IV™ Cross Reference

USE DIRECT REPLACEMENTS OR CONFIGURE MODELS TO MINIMIZE YOUR INVENTORY.
(See notes at the end of this cross reference table.)

Motor To Be Replaced	TRADELINE Replacement					Functional Replacement ^e
	TRADELINE Motor	Set Stroke To ^b	Add Internal Transformer	Add Switch	Comments	
M445A1000	M8185D1006	160	198162EA	220736A		M4185B1009
M445A1042	M8185D1006	160	198162AA	220736A		M4185B1017
M445A1067	M8185D1006	160	198162GA	220736A		
M445D1007	M8185D1006	160	198162EA			M4185A1001
M644A1016	M6184D1035	160				M6184D1035
M644A1024	M6184D1035	90				M6184A1015
M644B1049	M6184D1035	160	198162EA		Replaced motor has 30 second timing.	M6184A1023
M644C1006	M6184D1035	Adjustable			Replaced motor has 15/30 second timing.	M6184D1001
M644C1014	M6194D1017	Adjustable				M6194D1017
M644D1005	M6184D1035	Adjustable		220736B		M6184F1014
M644E1012	M6194D1017	90		220736A	Replaced motor has 60 second timing.	M6194B1011
M644E1053	M6194D1017	Adjustable		220736A		M6194E1006
M734D1004	M9164D1009	160	198162EA		Add Q7330A ^c .	
M734D1012	M9164D1009	90	198162EA		Add Q7330A ^c .	
M734D1038	M9164D1009	160			Add Q7330A ^c .	
M734H1000	M9164D1009	90	198162EA		Add Q7130A ^c , set at 10.5-13.5 Vdc, select CCW.	M7164G1030
M734H1018	M9164D1009	90	198162EA		Add Q7130A ^c , set to 4-7 Vdc, select CCW.	
M734H1026	M9164D1009	160			Add Q7130A ^c , set to 4-7 Vdc, select CCW.	
M734J1015	M9164D1009	160			Add Q7130A ^c , set to 4-7 Vdc.	
M734J1056	M9164D1009	90			Add Q7130A ^c , set to 10.5-13.5 Vdc.	M7164A1017 ^c
M734J1072	M9164D1009	160	198162EA	220736A	Add Q7130A ^c , set to 4-7 Vdc.	
M744A1006	M9184D1021 ^a	160			Add Q7330A ^c .	
M744A1014	M9184D1021 ^a	90			Add Q7330A ^c .	
M744D1003	M9184D1021 ^a	160			Add Q7130A ^c , set to 4-7 Vdc.	
M744S1005	M9184D1021 ^a	90	198162EA		Add Q7230A ^c , set to 4-20 mA.	M7284A1004 ^c
M744S1013	M9184D1021 ^a	160	198162EA		Add Q7230A ^c , set to 4-20 mA.	M7284A1012 ^c
M744T1004	M9184D1021 ^a	90	198162EA	220736B	Add Q7230A ^c , set to 4-20 mA.	M7284C1000 ^c
M744T1012	M9184D1021 ^a	160	198162EA	220736B	Add Q7230A ^c , set to 4-20 mA.	M7284C1018 ^c
M744Y1009	M9184D1021 ^a	90	198162EA	220736B	Add Q7230A ^c , set to desired range.	M7284Q1009 ^c
M744Y1017	M9184D1021 ^a	160	198162EA	220736B	Add Q7230A ^c , set to desired range.	M7284Q1017 ^c
M745A1003	M9185D1004	90			Add Q7330A ^c .	
M745A1011	M9185D1004	160			Add Q7330A ^c .	
M745G1007	M9185D1004	160			Add Q7130A ^c , set to 4-7 Vdc, select CCW.	
M745L1027	M9185D1004	160			Add Q7630A ^c .	
M745L1043	M9185D1004	90			Add Q7630A ^c .	M7685A1025 ^c
M745P1007	M9185D1004	160			Add Q7130A ^c , set to 4-7 Vdc.	M7185A1004 ^c
M745S1002	M9185D1004	90	198162EA		Add Q7230A ^c , set to 4-20 mA.	M7285A1003 ^c
M745S1010	M9185D1004	160	198162EA		Add Q7230A ^c , set to 4-20 mA.	M7285A1011 ^c
M745T1001	M9185D1004	90	198162EA	220736B	Add Q7230A ^c , set to 4-20 mA.	M7285C1009 ^c

^a The M9184D1013 and M9184D1021 have the same features and functions, except the M9184D1021 has a tapped shaft.

^b Adjustable indicates original motor has adjustable stroke.

^c Available only through Authorized Honeywell Distributors.

^d Can use auxiliary end of TRADELINE model, which is N.C. motor.

^e Functionally equivalent motor, may require 220738A Adapter Bracket (order separately) to match shaft height of Modutrol III motor being replaced. All Modutrol IV™ TRADELINE motors include 220738A Adapter Bracket.

Foot-Mounted Motors

Motor To Be Replaced	TRADELINE Replacement					Functional Replacement ^e
	TRADELINE Motor	Set Stroke To ^b	Add Internal Transformer	Add Switch	Comments	
M745T1019	M9185D1004	160	198162EA	220736B	Add Q7230A ^c , set to 4-20 mA.	M7285C1017 ^c
M745Y1006	M9185D1004	90	198162EA	220736B	Add Q7230A ^c , set to desired range.	M7285Q1008 ^c
M745Y1014	M9185D1004	160	198162EA	220736B	Add Q7230A ^c , set to desired range.	M7285Q1016 ^c
M845A1001	M8185D1006	160			220736A	
M845A1027	M8185D1006	160	198162AA	220736A		
M845A1035	M8185D1006	90	198162AA	220736A		M4185B1058
M845C1009	M8185D1006	160				M8185A1002
M845E1007	M8185D1006	160	198162EA	220736A	Replaced motor is Normally Open ^d .	M4185B1009
M934A1201	M9164D1009	160	198162AA			M9164A1013
M934A1219	M9164D1009	160	198162EA			M9164A1021
M934A1227	M9164D1009	160				M9164D1009
M934A1235	M9164D1009	160	198162GA			M9164A1088
M934A1243	M9164D1009	160		220736B		M9164C1050
M934A1250	M9164D1009	160	198162EA	220736B		M9164C1050
M934A1268	M9164D1009	160	198162AA	220736B		
M934A1284	M9164D1009	160	198162EA			M9164A1021
M934A1292	M9164D1009	160	198162EA	220736B		M9164C1050
M934A1318	M9164D1009	90	198162EA	220736B		M9164C1068
M934A1326	M9164D1009	90	198162EA			M9164A1005
M934A1334	M9164D1009	90				
M934A1342	M9164D1009	160				M9164A1021
M934D1000	M9174D1007	160	198162EA	220736A		M9174B1043
M934D1018	M9174D1007	160	198162EA	220736B		M9174C1033
M934D1026	M9174D1007	90	198162EA	220736A		M9174B1027
M934D1034	M9174D1007	90	198162EA	220736B		M9174C1025
M941A1008						M9484D1002 ^c
M941A1016						M9484D1010 ^c
M941A1024						M9484D1002
M941A1032						M9484D1020 ^c
M941A1057						M9484D1002 ^c
M941C1006						M9484E1009 ^c
M941C1014						M9484E1017 ^c
M941C1022						M9484E1033 ^c
M941C1030						M9484E1033 ^c
M941C1063						M9484E1033 ^c
M941D1005						M9484F1007 ^c
M941D1021						M9484F1023 ^c
M941D1039						M9484F1031 ^c
M941D1047						M9484F1049 ^c
M944A1010	M9184D1021 ^a	160				M9184A1019 ^c
M944A1028	M9184D1021 ^a	90				M9184A1035 ^c
M944B1175	M6284D1000	160				M6284D1000
M944B1191	M6294D1008	160				

^a The M9184D1013 and M9184D1021 have the same features and functions, except the M9184D1021 has a tapped shaft.

^b Adjustable indicates original motor has adjustable stroke.

^c Available only through Authorized Honeywell Distributors.

^d Can use auxiliary end of TRADELINE model, which is N.C. motor.

^e Functionally equivalent motor, may require 220738A Adapter Bracket (order separately) to match shaft height of Modutrol III motor being replaced. All Modutrol IV™ TRADELINE motors include 220738A Adapter Bracket.

Foot-Mounted Motors

Motor To Be Replaced	TRADELINE Replacement					Functional Replacement ^e
	TRADELINE Motor	Set Stroke To ^b	Add Internal Transformer	Add Switch	Comments	
M944B1241	M6294D1008	160		220736A		
M944C1000	M9184D1021 ^a	Adjustable			Replaced motor has 15/30 second timing.	M9184D1005
M944C1018	M9194D1003	Adjustable				M9194D1003
M944C1042	M9184D1013 ^a	Adjustable				M9184D1013
M944C1059	M9194D1003	Adjustable		220736A		M9194E1000
M944D1017	M9184D1021 ^a	Adjustable		220736B		M9184F1000
M944E1040	M6284D1000	Adjustable		220736B		M6284F1013
M944G1089	M6284D1000	160	198162EA			M6284A1048
M944G1097	M6284D1000	90	198162EA			M6284A1055
M944S1027	M6284D1000	Adjustable	198162EA	220736B		M6284F1013
M945A1017	M9185D1004	160				M9185A1018
M945A1082	M9185D1004	90				M9185A1026
M945A1157	M9185D1004	Adjustable				M9185D1004
M945B1057	M6285A1005					M6285A1005
M945B1065	M6285A1013					M6285A1013
M945C1015	M6285A1005			220736B		M6285C1001
M945D1006	M9185D1004	160		220736B		M9185C1006
M945F1004	M9185D1004	160			Replaced motor is Normally Open ^d .	M9186G1006
M945G1037	M6285A1005				Replaced motor is Normally Open ^d .	—
M954A1035	M9184D1021 ^a	Adjustable				M9184D1021
M954B1034	M9184D1021 ^a	90		220736B		M9184C1031
M954D1016	M9184D1021 ^a	Adjustable		220736B		M9184F1034
M955A1024	M9185D1004	Adjustable				M9185D1004
M955C1014	M9185D1004	Adjustable		220736A		M9185E1019
M975A1089	M9175D1014	160				M9175D1014
M975A1097	M9175D1014	160	198162EA			M9175D1014

^a The M9184D1013 and M9184D1021 have the same features and functions, except the M9184D1021 has a tapped shaft.

^b Adjustable indicates original motor has adjustable stroke.

^c Available only through Authorized Honeywell Distributors.

^d Can use auxiliary end of TRADELINE model, which is N.C. motor.

^e Functionally equivalent motor, may require 220738A Adapter Bracket (order separately) to match shaft height of Modutrol III motor being replaced. All Modutrol IV™ TRADELINE motors include 220738A Adapter Bracket.

Foot-Mounted Motors

Q181 Auxiliary Potentiometer for Modutrol Motors



Controls one to four Modutrol (series 90) motors from one master motor.

- Compatible with Modutrol III and Modutrol IV motors.
- Mounts on master motor and operates controlled motors in unison or in sequence.
- Controls motors with mechanical balance relay and solid state drive circuit. Use with 24V motors.

Dimensions, Approximate: 3-3/16 high, 3-1/4 wide, 3-3/8 deep
(81 mm high, 83 mm wide, 86 mm deep)

Ambient Temperature Range: (-18 C to +55 C)

Product Number	Control Signal	Angle of Rotation		Description
		Maximum Stroke	Minimum Stroke	
Q181A1007	SPST, On/off switch	160	—	Auxiliary potentiometer- For control of auxiliary equipment.
Q181A1015	SPST, On/off switch	160	—	Auxiliary potentiometer- For control of auxiliary equipment.
Q181A1064	SPST, On/off switch	160	—	Auxiliary potentiometer- For control of auxiliary equipment.
Q181A1072	SPST, On/off switch	160	—	Auxiliary potentiometer- For control of auxiliary equipment.

* TRADELINE models • SUPER TRADELINE models

Q209 Manual Potentiometer for Modutrol Motors



Used to limit minimum position of a proportioning Modutrol motor.

- Mount directly in motor.
- All wiring is accomplished within motor wiring compartment.
- Color-coded leadwires.

Dimensions, Approximate: 3-1/4 in. high, 3-3/8 in. wide, 3-7/8 in. deep
(83 mm high, 86 mm wide, 98 mm deep)

Ambient Temperature Range: -40 F to +150 F (-18 C to +55 C)

Product Number	Control Signal	Includes	Description
Q209E1002	SPST, On/off switch	150 ohm Potentiometer	Minimum position potentiometer, Modutrol IV Motor
Q209E1010	SPST, On/off switch	300 ohm potentiometer	Minimum position potentiometer, Modutrol IV Motor
Q209F1001	SPST, On/off switch	150 ohm Potentiometer	Minimum position potentiometer, Modutrol IV Motor
Q209F1019	SPST, On/off switch	300 ohm potentiometer	Minimum position potentiometer, Modutrol IV Motor

* TRADELINE models • SUPER TRADELINE models

Q607 Auxiliary Switches for Modutrol Motors



For control of auxiliary equipment as a function of motor shaft position.

- Compatible with Modutrol III and Modutrol IV motors. (Requires 220738A adapter bracket for use with Modutrol IV motors).
- Micro Switch precision switches, adjustable.
- Indicate motor position by use of a scale plate anchored to a common shaft, which allows Q607 to be adjusted for operational sequence before mounting.
- Adjustable plate allows universal mounting on either end of motor.
- Wrap-around cover for easy access to switch adjustments and wiring.
- Maintenance-free protection of the switches and cams.

Dimensions, Approximate: 6-7/16 in. high, 5-3/16 in. wide, 2-1/8 in. deep (164 mm high, 132 mm wide, 54 mm deep)

Ambient Temperature Range: -40 F to +150 F (-18 C to +55 C)

Approvals:

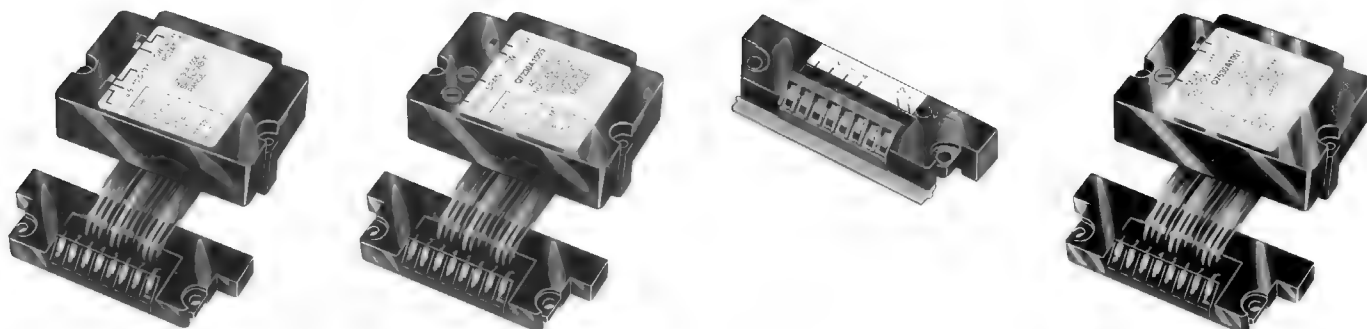
Underwriters Laboratories, Inc: listed

Product Number	Control Signal	Comments	Description
Q607A1050	SPST, On/off switch	Post 1969 Honeywell Modutrol Motors	Controls auxiliary equipment as a function of motor position.
Q607A1076	SPST, On/off switch	Post 1969 Honeywell Modutrol Motors	Controls auxiliary equipment as a function of motor position.
Q607B1067	SPST, On/off switch	Pre/Post 1969 Honeywell Modutrol motor	Controls auxiliary equipment as a function of motor position.
Q607B1083	SPST, On/off switch		Controls auxiliary equipment as a function of motor position.

* TRADELINE models • SUPER TRADELINE models

Foot-Mounted Motors

Q7130; Q7230; Q7330; Q7630 Interface Modules for Series 90 Modutrol IV Motors



For converting series 90 Modutrol IV motors to series 70 (electronic) control.

- Mounts and works inside wiring box of any series 90 Modutrol IV Motor.
- Protected from weather by motor's NEMA 3 wiring box.
- Mates to motor's quick-connect terminals and provides screw terminals for control wiring connections.
- Features solid-state circuitry with surface mount components.
- Plastic enclosure provides easy handling and protection for circuitry.
- Includes (except Q7330A) reversing switch to allow replacement of electrically normally open or electrically normally closed motors.

Dimensions, Approximate: Circuit Module: 3-1/2 in. (89 mm) wide, 2 in. (51 mm) deep, 1 in. (25 mm) high.

Terminal Block: 3-1/2 in. (89 mm) wide, 1 in. (25 mm) deep, 1/2 in. (13 mm) high.

Ribbon Connector: 4 in. (102 mm).

NOTE: Q7330A consists only of terminal block.

Ambient Temperature Ratings: -40 F to +150 F (-40 C to +66 C).

Electrical Ratings: Power Supply: 24 Vac, 50/60 Hz.

Power Consumption: 2 VA.

Input Impedance:

Q7130A: >100K ohms.

Q7230A: Voltage input >100K ohms;

Current input = 67 ohms.

Q7630A: >50K ohms.

Product Number	Application	Replaces	Replaces	Use With
Q7130A1006	Provides selectable voltage ranges: 4 to 7, 6 to 9 or 10.5 to 13.5 Vdc. Adapts M91XX Modutrol IV motor to function as M71XX model for M734H,J; M744D; M745G,P replacements.	M734H1034, M734H1000	M7164G1006	M9164D1009
		M734H1018	M7164G1014	
		M734H1026	M7164G1022	
		M734J1015	M7164A1009	
		M734J1031, M734J1023, M734J1056	M7164A1017	
		M734J1007, M734J1072	M7164B1007	
		M744D1011, M744D1003	M7184A1005	M9184D1013
		M745G1007	M7186G1000	M9186G1006
		M745P1007	M7185A1004	M9185D1004
Q7230A1005	Provides adjustable zero and span, voltage or current control (includes 4 to 20 mA and 2 to 10 Vdc). Adapts M91XX Modutrol IV motors to function as M72XX model for M744S,T,Y; M745S,T,Y replacements.	M744S1005	M7284A1004	M9184D1013
		M744S1013	M7284A1012	
		M744T1004	M7284C1000	
		M744T1012	M7284C1018	
		M744Y1009	M7284Q1009	
		M744Y1017	M7284Q1017	
		M745S1002	M7285A1003	M9185D1004
		M745S1010	M7285A1011	
		M745T1001	M7285C1009	
		M745T1019	M7285C1017	
		M745Y1006	M7285Q1008	
		M745Y1014	M7285Q1016	

Foot-Mounted Motors

Product Number	Application	Replaces	Replaces	Use With
Q7330A1004	Provides interface to W936 Control. Adapts M91XX Modutrol IV motor to function as M73XX model for M734D; M744A; M745A replacements.	M734D1004	M7364A1007	M9164D1009
		M734D1012	M7364A1015	
		M734D1038	M7364A1023	
		M744A1006	M7384A1003	M9184D1013
		M744A1014	M7384A1011	
		M745A1003	M7385A1002	M9185D1004
		M745A1011	M7385A1010	
Q7630A1001	Provides 3-wire 14 to 17 Vdc control with minimum position capability. Adapts M91XX Modutrol IV motors to function as M76XX model for M745 replacements.	M745L1027	M7685A1009	M9185D1004
		M745L1035, M745L1043	M7685A1017	
		M745H1006	M7685A1009	
		M745L1001	M7685A1041	
		M745L1019	M7685A1033	

Dimensions, Approximate:

**Fits inside wiring junction box of Modutrol IV Motor

Ambient Temperature Range: -40 F to +150 F (-18 C to +55 C)

Frequency: 50 Hz, 60 Hz

	Product Number	Control Signal	Power Consumption Driving
*	Q7130A1006	Provides selectable voltage ranges: 4 to 7, 6 to 9, or 10.5 to 13.5 Vdc. Adapts M91XX to function as M71XX model	2 VA
*	Q7230A1005	Provides adjustable zero & span, voltage or current control (includes 2-10 Vdc or 4-20 mA). Adapts M91XX to function as M72XX model.	2 VA
*	Q7330A1004	Provides interface to W936 Control. Adapts M91XX to function as M73XX model.	2 VA
*	Q7630A1001	Provides 3-wire 14 to 17 Vdc control with a minimum position capability. Adapts M91XX to function as M76XX model.	2 VA
* TRADELINE models • SUPER TRADELINE models			

Foot-Mounted Motors

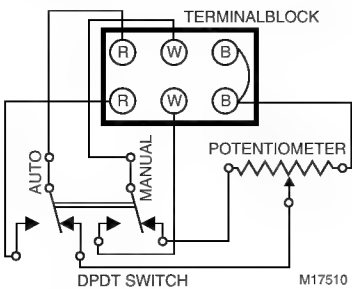
S443 Manual Potentiometer for Modutrol Motors



Used for remote manual control of proportioning (series 90) motors and relays.

- Compatible with Modutrol III and Modutrol IV motors.
- Select automatic or manual control with dpst toggle switch.
- Suitable for series 90, M7385; M7186; M7685; M7185; and M7285 motors controlled by 135 ohm slidewire inputs.
- Surface mounted, with conduit outlet on each side of case.
- Screw terminals.
- Scale marked OPEN-CLOSE.

Internal schematic of S443A.



Dimensions, Approximate: Including knob 3-3/4 in. high, 3-3/8 in. wide, 3-1/4 in. deep.(95 mm high, 86 mm wide, 83 mm deep)

****Fits inside wiring junction box of Modutrol IV Motor**

External Auxiliary Switches Available: —

Ambient Temperature Range: -40 F to +150 F (-18 C to +55 C)

Replacement Parts:

30112A Potentiometer, 135 ohm

Product Number	Control Signal	Description	Used With
S443A1007	SPST, On/off switch	135 ohm resistance manual Potentiometer. Includes DPDT toggle switch.	M9164; M9484; M9184; M9185 and motors replaced by these models.

* TRADELINE models • SUPER TRADELINE models

112894F Series Manual Potentiometers

The 112894F Series Manual Potentiometers (Manual Potentiometers) are used primarily as minimum positioning potentiometers in series 90 electric control circuits. The Manual Potentiometers have many applications and are generally used in conjunction with Electric Modutrol, Modutrol IV, and Versadrive Motor damper-actuators. The 135 ohm Manual Potentiometers provide up to 50 percent minimum position. The 270 ohm Manual Potentiometers provide up to 100 percent minimum position. The Manual Potentiometers are adaptable to surface or flush mounting.

- Flush or surface mounting
- 135 or 270 ohm models
- Positive screw terminal connections
- Multiple system capability

Product Number	Description
112894FA	Remote Temp Selector One 135 Ohm Potentiometer Marked Open- Close For Surface Mounting.
112894FB	Remote Temp Selector One 270 Ohm Potentiometer Marked Open- Close For Surface Mounting
112894FD	Remote Temp Selector One 135 Ohm Potentiometer Marked Open- Close Flush Mounting
112894FE	Manual Potentiometer 270 Ohm Flush Mounting

* TRADELINE models • SUPER TRADELINE models

M436; M836 Damper Motors



Dimensions, Approximate: 4-1/2 in. high, 4-5/8 in. wide, 3-3/4 in. deep (114 mm high, 118 mm wide, 95 mm deep)

External Auxiliary Switches Available: Yes

Internal Auxiliary Switch: 1

Frequency: 60 Hz

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH

Spring return motors for two-position back draft, outdoor air changeover, zone, or minimum position damper control.

- Operate outdoor air dampers for combustion or makeup air in residential and light industrial applications.
- Operate changeover dampers for heating and cooling systems.
- Operate minimum position dampers for ventilation and similar applications.
- Include internal spdt switch for controlling auxiliary equipment, additional motors, or to provide a burner interlock switch.
- Spring returns motor to start position on power failure.
- Drive shafts located on both sides of motor.
- Adjustable auxiliary switch for cascading motors or operating auxiliary equipment.
- Thermal breaker for overload protection during lifting stroke or if motor stalls.

Manual Operation: None

Motor Shafts: 2

Shaft Shape: hexagonal

Ambient Temperature Range: 32 F to 125 F (0 C to 52 C)

Approvals:

Underwriters Laboratories, Inc: File: E4436, Guide: XAPX

Product Number	Control Signal	Nominal Current Draw (amps)		Nominal Power (Watts)		Supply Voltage	Torque Ratings		Torque Breakaway (lb-in.)	Angle of Rotation		Timing Opening
		Opening	Holding	Opening	Holding		(lb-in.)	(Nm)		Maximum Stroke	Minimum Stroke	
M436A1116	Two position, SPST	0.37	0.12	27	8.5	120 Vac	20 lb-in.	2.3 Nm	30 lb-in.	75	75	30
M436A1124	Two position, SPST	0.19	0.06	27	8.5	240 Vac	20 lb-in.	2.3 Nm	30 lb-in.	75	75	30
M836A1042	Two position, SPST	1.85	0.6	27	8.5	24 Vac	20 lb-in.	2.3 Nm	30 lb-in.	75	75	30
M836B1033	Two position, SPST	1.34	0.73	20.3	11.2	24 Vac	15 lb-in.	1.7 Nm	30 lb-in.	75	75	25

* TRADELINE models • SUPER TRADELINE models

M833 Heat-actuated Damper Motors



Regulates duct damper position according to zone thermostat requirements.

- Attaches directly to a 1/2 in. damper shaft.
- Attaches to 3/8 in. damper shaft with adapter provided.
- Mounts in any position directly on a duct, or inside a standard wiring junction box where Class 1 wiring is required.

Dimensions, Approximate: 5-3/16 in. high, 3-7/8 in. wide, 2-5/16 in. deep (132 mm high, 98 mm wide, 59 mm deep)

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH

Manual Operation: None

Motor Shafts: 2

Shaft Shape: round

Ambient Temperature Range: Cooling: 140 F, Heating: 84 F (Cooling: 60 C, Heating: 29 C)

Product Number	Control Signal	Nominal Power (Watts)		Supply Voltage	Torque Ratings		Torque Breakaway (lb-in.)	Angle of Rotation	
		Opening	Holding		(lb-in.)	(Nm)		Maximum Stroke	Minimum Stroke
M833A1007	Two position, SPST	27	8.5	24 Vac	6 lb-in.	0.67 Nm	30 lb-in.	90	75

* TRADELINE models • SUPER TRADELINE models

Kit Mounted Motors

M835 Two-Position Zone Damper Actuator



Used with two-wire, 24-volt room thermostat or other controller for two position damper control.

- Controls zone or changeover damper in heating and air conditioning systems, and control gates on feeders.
- Spst end switch makes within 20 sec of full open, breaks within 20 sec after start of closing stroke.

Dimensions, Approximate: 5-1/2 in high, 4-1/4 in wide, 2-5/8 in deep (140 mm high, 108 mm wide, 67 mm deep)

External Auxiliary Switches Available: No

Frequency: 60 Hz

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH

Manual Operation: None

Motor Shafts: 2

Shaft Shape: round

Ambient Temperature Range: Cooling: 140 F, Heating: 200 F (Cooling: 60 C, Heating: 93 C)

Product Number	Control Signal	Nominal Power (watts)		Supply Voltage	Torque Ratings		Torque Breakaway (lb-in.)	Angle of Rotation	
		Opening	Holding		(lb-in.)	(Nm)		Maximum Stroke	Minimum Stroke
M835A1051	Two position, SPST	27	8.5	24 Vac	4 lb-in.	0.45 Nm	30 lb-in.	60	75

* TRADELINE models • SUPER TRADELINE models

M842 Two-Position Zone Damper Actuator



Controls dampers that require low operating force.

- Thermally driven motor used to control dampers in forced air systems.
- Die-cast aluminum housing.
- Mounts on duct surface.

Dimensions, Approximate: 5-13/16 in high, 3-7/8 in wide, 2-1/2 in deep (148 mm high, 98 mm wide, 64 mm deep)

External Auxiliary Switches Available: No

Fail Safe Mode: Spring Return

Humidity Ratings: 5 to 95% RH

Motor Shafts: 1

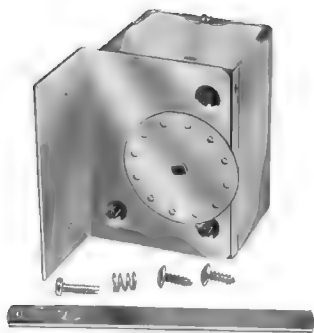
Shaft Shape: round

Ambient Temperature Range: Dependant on Duct Temperature

Product Number	Control Signal	Supply Voltage	Torque Ratings		Angle of Rotation	
			(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke
M842A1008	Two position, SPST	24 Vac	6 lb-in.	0.67 Nm	75	—

* TRADELINE models • SUPER TRADELINE models

M847 Two-Position Draft Damper Actuator



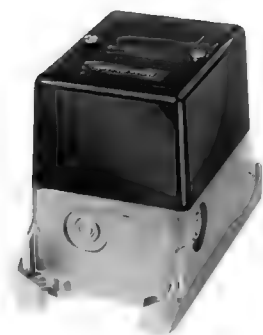
- Use with two-wire 24V room thermostats or other low voltage controllers to operate the draft damper on solid fuel furnaces or boilers and other similar light duty applications.
- Low voltage, spring-return damper actuator.
 - Equipped with mounting bracket for wall, duct or direct appliance mounting to control draft damper through an actuator arm or chain linkage arrangement.
 - Actuator wheel rotates in a clockwise direction (when facing the wheel) when energized.

Dimensions, Approximate: 3-1/2 in high, 2-5/8 in wide, 3-5/16 in deep (89 mm high, 66 mm wide, 84 mm deep)
External Auxiliary Switches Available: No
Frequency: 60 Hz
Fail Safe Mode: Spring Return
Humidity Ratings: 5 to 95% RH
Motor Shafts: 1
Shaft Shape: round
Ambient Temperature Range: 40 F to 125 F (5 C to 50 C)

Product Number	Control Signal	Supply Voltage	Torque Ratings		Angle of Rotation		Includes
			(lb-in.)	(Nm)	Maximum Stroke	Minimum Stroke	
M847A1072	Two position, SPST	24 Vac	1.9 lb-in.	0.21 Nm	45	—	3.8 in. linkage arm
M847A1080	Two position, SPST	24 Vac	1.9 lb-in.	0.21 Nm	45	—	38 in. linkage chain
* TRADELINE models • SUPER TRADELINE models							

Kit Mounted Motors

Versa Drive Actuators



2-position bidirectional, medium torque rotary actuators for use in damper control applications. Includes power failure return-to-closed feature. Operated by external spst contact. Position and stroke are field-adjustable by internal limit switches.

- Excel DDC, DeltaNet Micro Central/excel Plus, Excel 500, 100, 80, DeltaNet Microcel+U58™/MacroCel+I58™, Micronik 100 or Series 90 control.
- Battery to turn actuator counterclockwise on power loss.
- Field-adjustable stroke.
- Auxiliary switch (internal).
- Universal mounting bracket available.

Dimensions, Approximate: 4 in. high, 5.6 in. wide, 1.9 in. deep
(102 mm high, 142 mm wide, 49 mm deep)

Internal Auxiliary Switch: 1

Fail Safe Mode: Non-Spring Return

Humidity Ratings: 5 to 95% RH

Manual Operation: None

Motor Shafts: 2

Shaft Shape: Round, Crankarm supplied with actuator

Ambient Temperature Range: -40 F to +130 F (-18 C to +55 C)

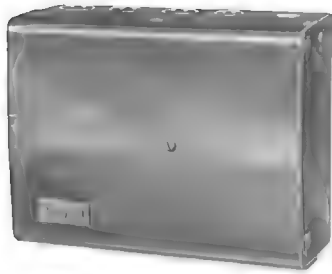
Product Number	Control Signal	Nominal Power (watts)		Frequency	Torque Ratings		Torque Breakaway (lb-in.)	Angle of Rotation		Includes
		Opening	Holding		(lb-in.)	(Nm)		Maximum Stroke	Minimum Stroke	
M684A1004	Three position, SPDT	27	8.5	—	45 lb-in.	5 Nm	30 lb-in.	90	75	—
M784A1010	Two position, SPST	27	8.5	50 Hz, 60 Hz	45 lb-in.	5 Nm	30 lb-in.	90	75	—
M786A1015	Two position, SPST	27	8.5	50 Hz, 60 Hz	45 lb-in.	5 Nm	30 lb-in.	90	75	—
M884B1009	SPST, On/off switch	6 W	—	50 Hz, 60 Hz	45 lb-in.	5 Nm	—	60	—	Power failure return-to-closed (some models)
M886B1004	SPST, On/off switch	6 VA	—	50 Hz, 60 Hz	45 lb-in.	5 Nm	—	160	—	Power failure return-to-closed (some models)

* TRADELINE models • SUPER TRADELINE models

Versa Drive Accessories

OS Number	Description
Q583C1002	Coupler and Bracket for Versadrive Actuator

S684; S984 Step Controllers



Type of Control: Electric

Dimensions, Approximate: 8-1/8 in. high, 10-9/16 wide, 4-9/16 in. deep (206 mm high, 268 mm wide, 116 mm deep)

Ambient Temperature Range: -40 F to +125 F (-40 C to +52 C)

Switch Ratings (per Switch): Inrush: 5700 VA

Sealed: 570 VA

Frequency: 50/60 Hz

Used for switching multiple loads in a predetermined sequence.

- Consists of reversible motor-driven cam and step switch assembly with limit switches, feedback potentiometer, recycle relay, multiple tapped transformer, and terminal strips for connecting to the control circuit.
- Provide up to 10 adjustable switches.
- Mount in any position.

Maximum Connected Load

All NC Contacts: 1000 VA @ 240 Vac,

1000 VA @ 208 Vac,

800 VA @ 120 Vac

NO and NC Contacts Combined: Inrush: 10800 VA,

Resistive: 1800 VA

Approvals:

Canadian Standards Association: Certified: File No. LR95329-1

Product Number	Current (Power Consumption)	Output	Timing for 160 degree Rotation (minute)	Comments	Includes
S684F1035	17W	10 spdt	1.5 min	multi tapped transformer Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch)	Feedback potentiometer for use with W964F Electronic Reset Panels
S684F1043	17W	10 spdt	5 min.	multi tapped transformer Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch)	Feedback potentiometer for use with W964F Electronic Reset Panels
S984D1049	23W	5 spdt	1.5 min	Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch) multi tapped transformer	—
S984D1056	23W	5 spdt	5 min.	Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch) multi tapped transformer	—
S984D1064	23W	5 spdt	13.5 min.	Rated for 150 F (66 C) maximum ambient temperature suitable for electric duct heater applications multi tapped transformer Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch)	—
S984F1070	23W	10 spdt	1.5 min	Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch) multi tapped transformer	—
S984F1088	23W	10 spdt	5 min.	Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch) multi tapped transformer	—
S984F1096	23W	10 spdt	13.5 min.	Rated for 150 F (66 C) maximum ambient temperature suitable for electric duct heater applications multi tapped transformer Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch)	—
S984J1042	23W	10 spdt	13.5 min.	Rated for 150 F (66 C) maximum ambient temperature suitable for electric duct heater applications multi tapped transformer Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch)	Dual Feedback potentiometer
S984K1017	23W	3 spdt	22 min.	Switch differential is adjustable from 5 to 160 degrees of angular rotation (each switch) multi tapped transformer	Special auxiliary potentiometer for use control of outdoor air dampers and cooling stages

* TRADELINE models • SUPER TRADELINE models

Step Controllers

Step Controller Parts

OS Number	Description	Used With
128026RDEP	Recycle Relay	
128853M	Feedback Potentiometer	
128874A	Snap Switch Assembly for S684 and S984	
133728B	Cam Assembly for S684 and S984 (odd-numbered switches)	
190090	Replacement motor for 22 min S684 or S984	
190091	Replacement Motor	
190093	Replacement Motor	
190094	Replacement motor for 1-1/2 min S684 or S984	
24337DB	Balance Relay only (mounting bracket not included)	
802866A	Remote balance relay used with S952 Sequencer	S952

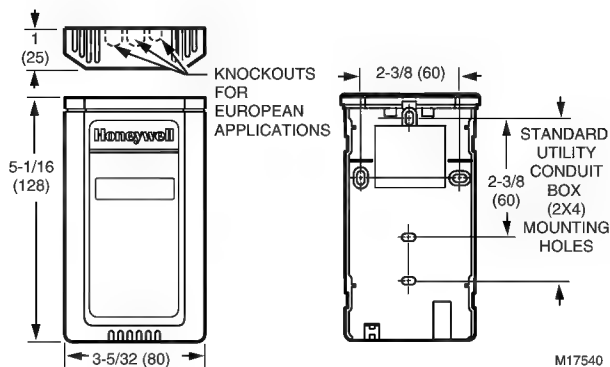
C7232 Carbon Dioxide (CO₂) Sensors



The Carbon Dioxide (CO₂) Sensors and Controllers are stand-alone carbon dioxide (CO₂) sensors for use in determining ventilation necessity with HVAC controllers. The sensor measures the CO₂ concentration in the ventilated space or duct. The sensors are used in ventilation and air conditioning systems to control the amount of fresh outdoor air supplied to maintain acceptable levels of CO₂ in the space.

- Models available with LCD that provides sensor readings and status information.
- Non-Dispersion-Infrared (NDIR) technology used to measure carbon dioxide gas.
- Gold-plated sensor provides long-term calibration stability.
- C7232 provides voltage or current output based on CO₂ levels.
- Models available with SPST relay output.
- Proportional plus Integral (P+I) control algorithm.
- Used for CO₂ based ventilation control (Demand Control Ventilation (DCV)).
- Automatic Background Calibration (ABC) algorithm based on long-term evaluation reduces required typical zero-drift check maintenance.
- Digital input with programmable delay time for occupancy function using a sensor, push-button, or switch.

Dimension Diagrams



Power Supply (V): 24 Vac (+/- 20%)

Frequency: 50 Hz, 60 Hz

Carbon Dioxide Range: 0 to 2000 ppm

Operating Temperature Range: 32 F to 122 F (0 C to 50 C)

Timing (Response): 2 minutes

Analog Output: 0/2 to 10Vdc or 0/4 to 20mA w/ one relay output

Relay Output: One: Normally Open SPST

Accuracy: 5% full scale,

Type: Non-dispersive Infrared (NDIR)

Product Number	Display	Approximate Dimensions		Mounting	Description	Includes
		(inch)	(mm)			
C7232A1008	Yes	5 1/16 in. high, 3 11/16 in. wide, 2 in. deep	128 mm high, 80 mm wide, 25 mm deep	Wall mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	Honeywell Logo
C7232A1016	No	5 1/16 in. high, 3 5/32 in. wide, 2 in. deep	128 mm high, 80 mm wide, 25 mm deep	Wall mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	Honeywell Logo
C7232A1024	Yes	5 1/16 in. high, 3 5/32 in. wide, 2 in. deep	128 mm high, 80 mm wide, 25 mm deep	Wall mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	No Honeywell Logo
C7232B1006	Yes	5 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	142 mm high, 84 mm wide, 87 mm deep, plus 203 mm sensing tube	Duct Mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	Honeywell Logo
C7232B1014	No	5 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	142 mm high, 84 mm wide, 87 mm deep, plus 203 mm sensing tube	Duct Mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	Honeywell Logo
C7232B1022	Yes	5 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	142 mm high, 84 mm wide, 87 mm deep, plus 203 mm sensing tube	Duct Mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	No Honeywell Logo
C7232A1032	No	6 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	128 mm high, 80 mm wide, 25 mm deep	Wall mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	No Honeywell Logo
C7232B1030	No	7 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	142 mm high, 84 mm wide, 87 mm deep, plus 203 mm sensing tube	Duct Mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR)	No Honeywell Logo

* TRADELINE models • SUPER TRADELINE models

Carbon Dioxide Sensor

C7632 Carbon Dioxide (CO2) Sensors



The C7632 Carbon Dioxide (CO₂) Sensors offer a fixed 0-2000ppm and fixed 0-10Vdc output. No adjustments are necessary. Like the C7232 sensors, these are for use in determining ventilation necessity with HVAC controllers. The sensor measures the CO₂ concentration in the ventilated space or duct. The sensors are used in ventilation and air conditioning systems to control the amount of fresh outdoor air supplied to maintain acceptable levels of CO₂ in the space.

- Non-Dispersion-Infrared (NDIR) technology used to measure carbon dioxide gas.

Power Supply (V): 24 Vac (+/- 20%)

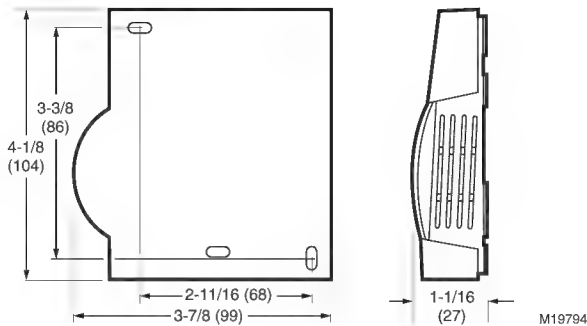
Frequency: 50 Hz, 60 Hz

Carbon Dioxide Range: 0 to 2000 ppm fixed

Operating Temperature Range: 32 F to 122 F (0 C to 50 C)

- Gold-plated sensor provides long-term calibration stability.
- Fixed 0-2000ppm, fixed 0-10Vdc output.
- Used for CO₂ based ventilation control (Demand Control Ventilation (DCV)).
- Automatic Background Calibration (ABC) algorithm based on long-term evaluation reduces required typical zero-drift check maintenance.

Dimension Diagrams



Analog Output: 0-10Vdc fixed

Relay Output: None

Accuracy: 5% full scale,

Type: Non-dispersive Infrared (NDIR)

Product Number	Display	Approximate Dimensions		Timing (Response)	Mounting	Description	Includes
		(inch)	(mm)				
C7632A1004	No	4 1/8 in. high, 3 7/8 in. wide, 1 1/16 in. deep	104mm high, 99 mm high, 27 mm deep	2 minutes	Wall mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR), Wall Mount, Honeywell Logo	Honeywell Logo
C7632B1002	No	5 5/8 in. high, 3 5/16 in. wide, 3 7/16 in. deep, plus 8 in. long sensing tube	142 mm high, 84 mm wide, 87 mm deep, plus 203 mm sensing tube	2 minutes	Duct Mounted	Carbon Dioxide Sensor, Non-dispersive Infrared (NDIR), Duct Mount, Honeywell Logo	Honeywell Logo

* TRADELINE models • SUPER TRADELINE models

H7012 Humidity and Temperature Room Sensors



Wall-mounted, capacitance type relative humidity room sensor.

- Capacitance type sensing element.
- Wide sensing range.
- Temperature indication sensor, H7012B only.

Application: Humidity

Dimensions (in.): 5 1/8 in. high, 3 3/16 in. wide, 1 11/32 in. deep
(130 mm high, 81 mm wide, 34 mm deep)

Product Number	Application Type	Sensor Type	Comments
H7012B1007	Wall mount	PT1000	Capacitance type humidity sensor
* TRADELINE models • SUPER TRADELINE models			

C7600 Humidity Sensor



Used with any controller capable of processing a 4-20 mA or 2-10 Vdc signal.

- Provide humidity sensing through a long-lasting thick-film capacitive polyimide sensing element that is both accurate and stable over time.
- Vents in top cover provide for airflow to humidity sensing element inside.
- Mounts easily because of compact size and lightweight construction.
- Remains operational after exposure to all outdoor air humidity extremes.

Application: Humidity

Dimensions (in.): 3 5/32 in. high, 3 7/8 in. wide, 1 in. deep
(80 mm high, 98 mm wide, 25 mm deep)

Operating Temperature Range: 32 F to 125 F (0 C to 52 C)

Product Number	Application Type	Sensor Type	Commonly Used With	Used With	Comments
C7600A1002	Duct mount	4-20 mA inversely proportional	W7600		Two 1/4 in. quick-connect terminals
C7600C1008	Duct mount	4-20mA directly proportional		XL15, XL10; CVAHU (models B & C); W7600; Excel Plus; H775	Two 1/4 in. quick-connect terminals
* TRADELINE models • SUPER TRADELINE models					

Pressure Sensors

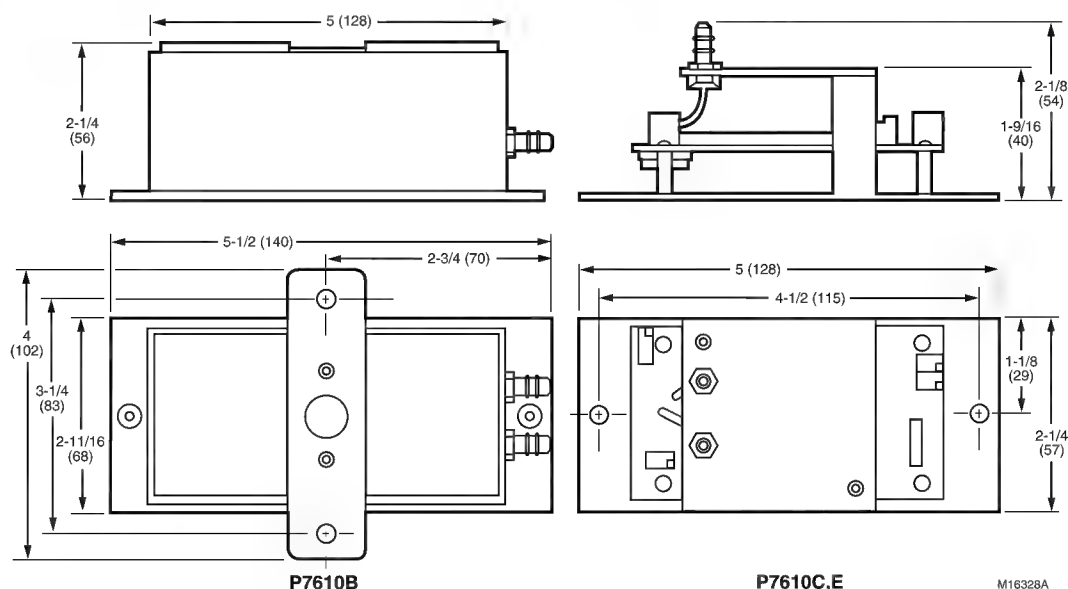
P7610 Differential Pressure Sensors



The P7610 Differential Pressure Sensors use a glass-on silicon (GI-Si) capacitance sensor to measure very low pressure to control temperature-related zero drift, calibration shift from overpressure, non-repeatability and non-linearity. The sensors offer reliable, accurate measurement and control of building/room pressure, air flow, duct pressure, filter pressure drop and other extremely low pressure applications.

- 100 percent solid-state, micro-machined, glass-on-silicon, ultra-stable pressure sensor.
- Up to 10 psid overpressure without zero shift.
- Wide 12-40 Vdc, 12-35 Vac unregulated supply voltage.
- Short circuit and reverse polarity protected.
- Conforms to EMC standards EN50082-1/EN55014/EN60730-1.
- Non-interacting zero and span trimmers.
- NIST traceable calibration.
- Compatible with XL10, XL15, CVAHU (models B and C), unit vent, and RIO.
- Use with R7426D controller for stand-alone pressure control.
- Temperature compensated output.
- Duct models have 8 in. static pressure probe.

Dimension Diagrams



Connections: Pneumatic: 1/4 in. Brass Hose Barb, Electrical:
Unpluggable screw terminal block

Temperature Ratings: 0 F to 175 F (-18 C to 80 C)

Product Number	Pressure Range (in. w.c.)	Output	Mounting Type	Comments
P7610B1012	0-1, 0-0.5, 0-0.25; ± 0.5 , $\pm 0.25 \pm 0.125$	4-20 mA, 2-wire	NEMA 4 Enclosure	Panel mount
P7610B1020	0-5, 0-2.5, 0-1.25; ± 2.5 , ± 1.25 , ± 0.625	4-20 mA, 2-wire	NEMA 4 Enclosure	Panel mount
P7610B1038	0-30, 0-15, 0-7.5; ± 15 , ± 7.5 , ± 3.75	4-20 mA, 2-wire	NEMA 4 Enclosure	Panel mount
P7610C1002	0-1, 0-0.5, 0-0.25; ± 0.5 , $\pm 0.25 \pm 0.125$	4-20 mA, 2-wire		Panel mount
P7610C1010	0-5, 0-2.5, 0-1.25; ± 2.5 , ± 1.25 , ± 0.625	4-20 mA, 2-wire		Panel mount
P7610C1028	0-30, 0-15, 0-7.5; ± 15 , ± 7.5 , ± 3.75	4-20 mA, 2-wire		Panel mount
P7610D1000	0-5, 0-2.5, 0-1.25	4-20 mA, 2-wire	NEMA 4 Enclosure	Duct pressure transducer with 8 in. static pressure probe.
P7610D1018	0-15, 0-7.5, 0-3.75	4-20 mA, 2-wire	NEMA 4 Enclosure	Duct pressure transducer with 8 in. static pressure probe.
P7610E1007	0-1, 0-0.5, 0-0.25; ± 0.5 , $\pm 0.25 \pm 0.125$	0 to 5 Vdc or 0 to 10 Vdc, 3-wire		Panel mount
P7610F1005	0-1, 0-0.5, 0-0.25	0 to 5 Vdc or 0 to 10 Vdc, 3-wire	NEMA 4 Enclosure	Duct pressure transducer with 8 in. static pressure probe.

* TRADELINE models • SUPER TRADELINE models

C7031 Electronic Temperature Sensors



Electronic temperature sensors used with DDC Systems.

- Solid state thermistor element provides accurate sensing of temperature changes.

Application: Temperature

Dimensions (in.): 2 3/4 in. high, 2 11/16 in. wide, 1 15/16 in. deep
(70 mm high, 68 mm wide, 49 mm deep)

Operating Temperature Range: 40 F to 240 F (4 C to 116 C)

- Not affected by dust, dirt, or vibration.
- Primary sensor models can be used with a remote setpoint potentiometer.

Accessories:

S963B1128 Manual Potentiometer (135 ohm)

Product Number	Application Type	Sensor Type	Used With	Comments
C7031D1070	Hot or chilled water	PT1000	Excel 500, 100, R7426, W7600, Excel 500, Excel 100	Includes immersion well 32005960-001
C7031G1016	Outdoor reset of room temperature	1715 @ 90F NTC	W7100 (outdoor reset)	—
C7031J1068	Duct discharge air (averaging)	PT1000	Excel 500, 100, R7426, Excel 500, Excel 100	—
* TRADELINE models • SUPER TRADELINE models				

Temperature Sensors

C7041 20K ohm NTC Temperature Sensors

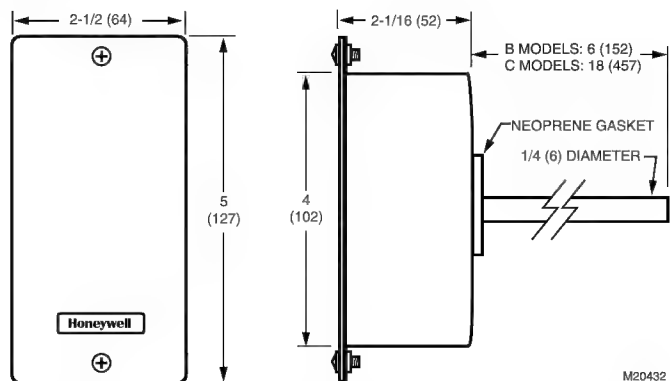


Electronic temperature sensors used with DDC Systems.

- The C7041 series of electronic temperature sensors are designed for use with the Excel 10, Excel 15, or any controller requiring a 20K ohm NTC non-linearized sensor input.
- Various models are available for sensing duct air temperature, averaging air temperature, water temperature, outdoor air temperature, or water pipe temperature.

- All devices consist of a temperature sensitive element and leadwires enclosed for protection from physical damage. Sensor element enclosures are made of various lengths and configurations for the specific applications.
- All devices have a wiring box housing to enclose the field wiring connections.
- C7041F outdoor sensor design, made of aluminum and stainless steel, is waterproof, and includes a sunshield.

Dimension Diagrams



Application: Temperature

Operating Temperature Range: -40 F to 250 F (-40 C to 121 C)

Product Number	Application Type	Sensor Type	Used With	Description	Comments
C7041B1007	Duct Discharge	20 K ohm NTC	DDC Systems	6 in., Duct Discharge Air Sensor	Direct replacement for C7031B1033
C7041C1005	Duct Discharge	20 K ohm NTC	DDC Systems	18 in., Duct Discharge Air Sensor	Direct replacement for C7031C1031
C7041D1003	Hot or chilled water	20 K ohm NTC	DDC Systems	4 in. Immersion Sensor, for Hot or Chilled water	Purchase Well separately (Part No. 32005960-001) Functional replacement for C7013D1062
C7041F1008	Outside air temperature	20 K ohm NTC	DDC Systems	Outdoor waterproof sensor with sunshield	Threads onto standard 5/8 in. conduit. Weatherproof design
C7041J1009	Duct discharge air (averaging)	20 K ohm NTC	DDC Systems	144 in., Duct Discharge Air Averaging Sensor	Direct replacement for C7031J1050
C7041K1007	Hot or chilled water (strap on)	20 K ohm NTC	DDC Systems	Strap-on Sensor for Hot or Chilled Water	Direct replacement for C7031K1017

* TRADELINE models • SUPER TRADELINE models

C7046 Discharge Air Temperature Sensors



Electronic discharge air temperature sensors.

- No settings or calibration required.
- Solid state components not affected by dust or dirt.
- Fast reacting.
- Rugged aluminum insertion probe.
- Mounts on duct or plenum surface with integral mounting flange, or in a 2 x 4 in. junction box.

Application: Temperature

Dimensions (in.): 8 in. probe length (203 mm probe length)

Operating Temperature Range: 40 F to 150 F (4 C to 66 C)

Product Number	Application Type	Sensor Type	Used With	Comments
C7046A1004	Duct Discharge	3K ohm NTC	W973, W6210, W6215, W7210, W7215, W7459, W7460	—
C7046A1038	Duct Discharge	3K ohm NTC	W973, W6210, W6215, W7210, W7215, W7459, W7460	—
C7046B1010	Zone discharge, hot or cold deck and/or remote return air.	22.8 K ohm NTC	W7080	—
C7046C1000	single point sensing	3K ohm NTC	W973	Quick response time
C7046D1008	Duct Discharge	PT1000	Excel 500, 100, 15, 10Excel 500, Excel 15, Excel 100, Excel 10	—

* TRADELINE models • SUPER TRADELINE models

C7100 Averaging Duct Temperature Sensors



Used to sense temperature in discharge duct.

- Use to troubleshoot system operation.
- Platinum positive temperature coefficient sensor.
- Factory calibrated; no settings or field calibration required.

Application: Temperature

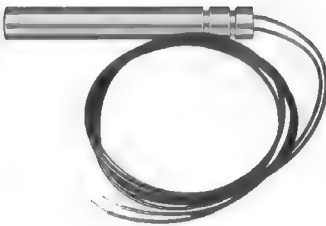
Dimensions (in.): 3/4 in. dia. x 13 in. long (19 mm dia. x 330 mm long)

Operating Temperature Range: 40 F to 220 F (4 C to 104 C)

Product Number	Application Type	Sensor Type	Used With	Comments
C7100A1015	Duct Discharge	PT3000, 3484 ohms @ 25C PTC	W8900, W7100	Platinum, not for use with T775
C7100B1013	Duct Discharge	22.8 K ohm @ 25C NTC	W7080	—
C7100C1003	Duct Discharge	PT3000, 3484 ohms @ 25C PTC	T775	Platinum
C7100D1001	Duct Discharge	PT1000, 1097 ohms @ 25C PTC	Excel 500	Platinum

* TRADELINE models • SUPER TRADELINE models

C7170 Immersion Sensor



Primary electronic temperature sensor for the R7380J,L, W7100 and W7505 load inputs for immersion, strap-on and duct mounting.

- Requires no setting or calibration.
- Sensor can be located up to 1195 ft. (340 m) from controller.
- Pigtail leads.

Application: Temperature

Operating Temperature Range: -40 F to 257 F (-40 C to 125 C)

Product Number	Application Type	Sensor Type	Used With	Comments
C7170A1002	Immersion or strap-on discharge	PT3000, 3484 ohms @ 25C PTC	R7380J,L, W7100, W7600, W7620	Use immersion well 121371A copper or 121371E steel.
C7170A1010	Immersion or strap-on discharge	PT3000, 3484 ohms @ 25C PTC	R7380J,L, W7100, W7600, W7620	Use immersion well 121371A copper or 121371E steel.
C7170B1000	Immersion or strap-on discharge	PT1000, 1097 ohms @ 25C PTC	Excel 500	Use immersion well 121371A copper or 121371E steel.

* TRADELINE models • SUPER TRADELINE models

Temperature Sensors

C7770A Duct Probe



Direct wired temperature sensor used to sense discharge or return air temperature in a duct controlled by an Excel 10 Series 2000 Controller.

- Primary and/or secondary sensor for use with electronic control systems.
- Integral 20 K ohm non-linear NTC thermistor.
- Rugged aluminum insertion probe.

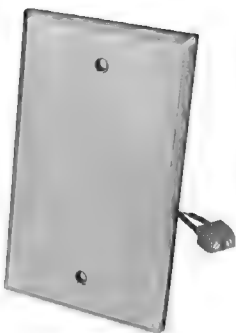
Application: Temperature

Dimensions (in.): 3/8 in. dia (10 mm dia. x 165 mm long)

Operating Temperature Range: 45 F to 99 F (7 C to 37 C)

Product Number	Application Type	Sensor Type	Used With
C7770A1006	Duct mount	20 K ohm NTC non-linear	XL10
* TRADELINE models • SUPER TRADELINE models			

C7772 Flush Mount Sensors



The C7772 series of wallplate Temperature Sensors are designed to be used with the Excel 5000 family and other Honeywell controllers. The C7772 sensors provide a resistive output signal proportional to sensed room or space temperature. The C7772 is well suited for low profile wall mounted applications where durability and tamper proof construction is desired, such as schools, prisons, and institutions.

- Low profile when mounted on industry standard utility conduit box.
- Rugged, brushed stainless steel wallplate.
- Integral foam pad isolates wallplate sensor from conduit box.
- Insulated screw terminals ensure reliable field wiring connection.
- Models available with a variety of resistive temperature sensor elements.

Application: Temperature

Dimensions (in.): 4 1/2 in. high, 2 3/4 in. wide
(114 mm high, 70 mm wide)

Operating Temperature Range: 45 F to 99 F (7 C to 37 C)

Product Number	Application Type	Sensor Type
C7772A1004	Wallplate on junction box	20 K ohm NTC
C7772B1002	Wallplate on junction box	PT1000
C7772C1000	Wallplate on junction box	PT100
C7772D1008	Wallplate on junction box	PT3000
* TRADELINE models • SUPER TRADELINE models		

T7022A Return Air Temperature Sensor



Application: Temperature

Dimensions (in.): 3/8 in. diameter

Operating Temperature Range: 60 F to 90 F (16 C to 32 C)

Product Number	Application Type	Sensor Type	Used With
T7022A1010	Duct mount	1420 ohms @ 75 F	T7300, T7067B, W927
* TRADELINE models • SUPER TRADELINE models			

T7047 Remote Temperature Sensors



- Housing only.
- Without sensor.
- Tamper proof T7047C models available.
- Mount on wall or 2 x 4 in. vertical outlet box with screws provided.
- Comes in Series 1000 or Series 2000 styling as shown.

Application: Temperature

Accessories:

S963B1003 MANUAL POTENTIOMETER

S963B1037 Manual Potentiometer (480 ohm)

Product Number	Application Type	Sensor Type	Used With
T7047C1090	Sensor housing only.	Enclosure without sensor	T775, T7079 remote bulb sensors

* TRADELINE models • SUPER TRADELINE models

T7047 Remote Temperature Sensors for use with T7300 thermostats



- Housing only.
- Without sensor.
- Tamper proof T7047C models available.
- Mount on wall or 2 x 4 in. vertical outlet box with screws provided.
- Comes in Series 1000 or Series 2000 styling as shown.

Application: Temperature

Dimensions (in.): 4 5/8 in. high, 3 5/8 in. wide, 1 5/8 in. deep
(118 mm high, 93 mm wide, 41 mm deep)

Operating Temperature Range: 40 F to 110 F (4 C to 43 C)

Accessories:

S963B1003 MANUAL POTENTIOMETER

S963B1037 Manual Potentiometer (480 ohm)

Product Number	Application Type	Color	Sensor Type	Used With	Comments
T7047C2007	Wall mount	Taupe	1420 ohms @ 75 F	T7300/Q7300	Series 2000 styling
T7047C2015	Wall mount	Premier White®	1420 ohms @ 75 F	T7300/Q7300	Series 2000 styling
T7047G2008	Wall mount	Taupe	710 ohm @ 75F	T7300/Q7300	Series 2000 styling
T7047G2016	Wall mount	Premier White®	710 ohm @ 75F	T7300/Q7300	Series 2000 styling

* TRADELINE models • SUPER TRADELINE models

Temperature Sensors

T7147 Remote Temperature Sensors for use with T7300 thermostats



For use with T7300/Q7300 Thermostat system to provide space temperature sensing, and switch initiation and indication of overrides from remote location.

- Factory-calibrated negative temperature coefficient (NTC) thermistor sensing element.
- Mount on wall or 2 x 4 in. vertical outlet box.
- Locking cover.
- Override button.
- Warmer/cooler buttons on some models.
- 710 ohm models are for use with certain multiple sensor configurations. See T7300 product literature for details.

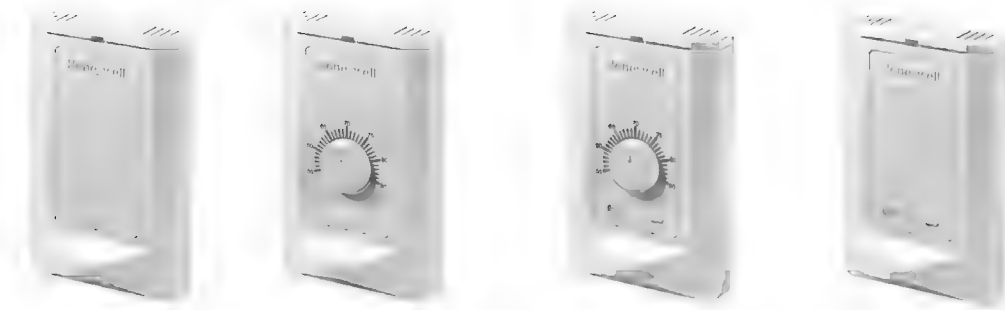
Application: Temperature
Dimensions (in.): 4 5/8 in. high, 3 5/8 in. wide, 1 5/8 in. deep
(118 mm high, 93 mm wide, 41 mm deep)
Operating Temperature Range: 40 F to 110 F (4 C to 43 C)

Accessories:
209649A Taupe Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm) including screws and adaptor plate

Product Number	Application Type	Color	Sensor Type	Used With	Comments
T7147A2000	Wall mount or 2 x 4 in. vertical outlet box	Taupe	1420 ohms @ 75 F	T7300/Q7300	Series 2000 styling, with override button.
T7147A2018	Wall mount or 2 x 4 in. vertical outlet box	Taupe	1420 ohms @ 75 F	T7300/Q7300	Series 2000 styling with override button, warmer and cooler buttons
T7147A2026	Wall mount or 2 x 4 in. vertical outlet box	Premier White®	1420 ohms @ 75 F	T7300/Q7300	Series 2000 styling with override button
* T7147G2015	Wall mount or 2 x 4 in. vertical outlet box	Taupe	710 ohm @ 75F	T7300/Q7300	Series 2000 styling, with override button.
* T7147G2023	Wall mount or 2 x 4 in. vertical outlet box	Taupe	710 ohm @ 75F	T7300/Q7300	Series 2000 styling with override button, warmer and cooler buttons

* TRADELINE models • SUPER TRADELINE models

T7750 Wall Modules



Temperature sensors for use with Excel 10 Series 1000 Controllers.

- Integral linearized 20K ohm NTC thermistor.
- Vertical Mounting.
- Models available with setpoint adjustment.

Application: Temperature

Dimensions (in.): 5 1/32 in. high, 3 5/32 in. wide, 1 19/32 in. deep
(128 mm high, 80 mm wide, 41 mm deep)

Operating Temperature Range: 45 F to 99 F (7 C to 37 C)

Accessories:

107323A Remote Bulb Shield Assembly, 3/8 in. diameter bulbs, < 5 in. long

- Models available with occupied/unoccupied override.
- For use only as replacement of existing T7750's. Not for new installations. All new Honeywell controllers now use T7770 Wall Modules.

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

Replacement Parts:

121371A Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.

121371E Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.

Product Number	Application Type	Sensor Type	Setpoint Temperature Range		Used With	Comments
			(F)	(C)		
T7750A1000	Wall mount	20 K ohm NTC linear	—	—	W7751	—
T7750B1008	Wall mount	20 K ohm NTC linear	55 F to 85 F	12 C to 30 C	W7751 or XL600, 500, 100, 80, 20	Has optional setpoint
T7750C1006	Wall mount	20 K ohm NTC linear	55 F to 85 F	12 C to 30 C	W7751	Has optional setpoint, override, and override LED
T7750D1004	Wall mount	20 K ohm NTC linear	—	—	W7751	Has override, and override LED

* TRADELINE models • SUPER TRADELINE models

Temperature Sensors—Networked

C7115 Multifunction Sensor

Approvals:

CE: Pending

Federal Communications Commission: FCC Part 15, pending

Product Number	Network Communications	Description
C7115C1006	LonWorks Bus	Sensor for ceiling mounting, with 3 sensing elements and LON connection. Inputs/outputs available for signal transfer to/from LON bus. Built-in occupancy controller.
* TRADELINE models • SUPER TRADELINE models		

T7560 Digital Wall Modules

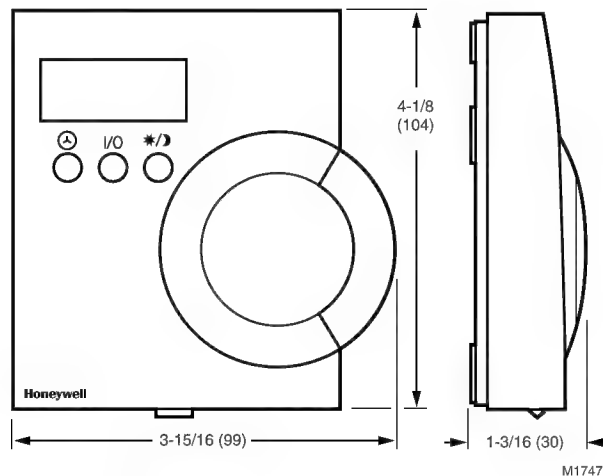
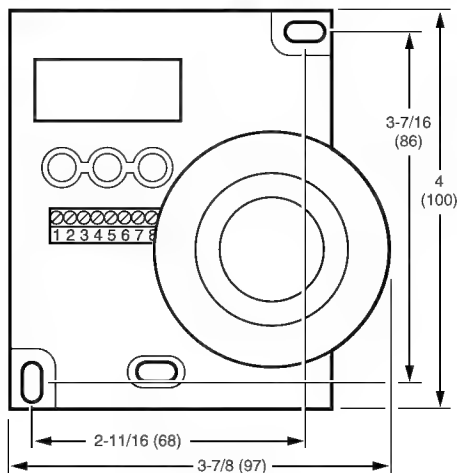


The T7560 Digital Wall Module is a direct wired wall module for use with Excel 600, 500, 100, and Excel 10 Series 2000 controllers.

Includes setpoint wheel, override buttons, and LCD display for temperature, setpoint, fan status, and/or humidity

- 2 models configurable to cover all applications.
- T7560B has Humidity sensor.
- Intuitive and easy to operate.

Dimension Diagrams



Dimensions (in.): 4 1/8in high, 3 15/16 in wide, 13/16 in deep
(104mm high, 99mm wide, 30mm deep)

Humidity Ratings: 5 to 90% RH, non-condensing

Temperature Ratings: 55 to 85 F

Approvals:

CE: Approved

N.E.C. N.E.C. Corporation Class II

Underwriters Laboratories, Inc: UL Inc. Listed: per UL standard 916

Accessories:

T7560LONJACK T7560 LON-JACK

Product Number	Application	Compatible with:	Comments	Includes
T7560A1018	Digital Wall Module	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	White and Blue	Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint and fan status
T7560A1042	Digital Wall Module	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	All White	Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint and fan status
T7560B1016	Digital Wall Module	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	White and Blue	Humidity sensor, Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint, fan status and humidity
T7560B1032	Digital Wall Module	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	All White	Humidity sensor, Setpoint Wheel, Unoccupied/Occupied override, and LCD display for temperature, setpoint, fan status and humidity

* TRADELINE models • SUPER TRADELINE models

Temperature Sensors—Networked

	Product Number	Application	Network Communications	Compatible with:	Comments	Includes
	T7560LONJACK	Digital Wall Module	LonWorks Bus	T7560A, B		—

T7770 Wall Modules



- Models with setpoint adjustment.
- Models with occupied/unoccupied override bypass with LED.
- Models with 3-position (Auto/Off/On) or 5-position (Auto/Off/1/2/3 speed) fan switch.
- Models with or without Honeywell logo.
- E-Bus jack on all models except low cost T7770A1006.
- Locking cover on all models.
- Operating range 45 to 99 F (7 to 37 C).
- UL 94-5V rated.

Dimensions (in.): 5 1/32 in. high, 3 5/32 in. wide, 1 in. deep
(128 mm high, 80 mm wide, 25 mm deep)

Shipping Temperature Range: -40 F to +150 F (-40 C to + 65 C)

Approvals:

Canadian Standards Association: Listed

N.E.C. N.E.C. Corporation Class II

Underwriters Laboratories, Inc: Underwriters Laboratories Inc. Listed
916 Energy Management Standard

Direct wired wall modules for use with Honeywell Excel 600, 500, 100, 80, 20, and Excel 10 Series 2000 Controller.

	Product Number	Application	Network Communications	Compatible with:	Comments	Includes
	T7770A1006	Module	—	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	—
	T7770A2004	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	LonWorks connection
	T7770B1004	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	setpoint adjustment and LonWorks bus connection
	T7770B1020	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	setpoint adjustment and LonWorks bus connection
	T7770B1046	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	setpoint adjustment and LonWorks bus connection
	T7770C1002	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection and occupied/unoccupied override, LED.
	T7770C1028	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection and occupied/unoccupied override, LED.
	T7770C1044	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection and occupied/unoccupied override, LED.
	T7770C1051		LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection and occupied/unoccupied override, LED.
	T7770D1000	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	LonWorks Bus connection and occupied/unoccupied override, LED

* TRADELINE models • SUPER TRADELINE models

Temperature Sensors—Networked

Product Number	Application	Network Communications	Compatible with:	Comments	Includes
T7770E1023	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, Lonworks bus connection, unoccupied/occupied override, LED, and 3 position fan switch
T7770F1005	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection, occupied/unoccupied override, LED, and 5 position fan switch
T7770F1021	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection, occupied/unoccupied override, LED, and 5 position fan switch
T7770F1047	Module	LonWorks Bus	Excel 600, 500, 100 and Excel 10, 15 Series Controllers	Mounted on a standard 2 x 4 inch junction box or on a 60 mm diameter junction box.	Setpoint adjustment, LonWorks Bus connection, occupied/unoccupied override, LED, and 5 position fan switch

* TRADELINE models • SUPER TRADELINE models

T7790 Wireless Wall Module



Dimensions (in.): 5 1/32 in. high, 3 5/32 in. wide, 1 in. deep
(28 mm high, 80 mm wide, 25 mm deep)

Temperature Ratings: 55 to 85 F

Operating Temperature Range: 45 to 99F (sensor range)
(7.3 to 37.2 C (sensor range))

The T7790C Wireless Wall Module is used with the Q7790A Wireless Receiver to communicate information about space temperature, setpoint and manual occupancy override to Excel 10 Controllers.

- Fast low cost installation and easy relocation because of wireless technology.
- Wireless 900MHz direct sequence spread spectrum technology.
- Includes space temperature sensor, setpoint adjustment, and occupied/unoccupied override bypass.
- Five Year battery life.
- Data is spread out over many separate radio frequencies and is therefore less susceptible to interference and jamming, as well as being a very secure means for data transfer.
- Open field range of 1 mile (extendable by using Q7791 Wireless repeater).
- Able to communicate with Excel 500, 100, and 50 by using Q7750 Zone Manager.
- UL 94-5V rated.

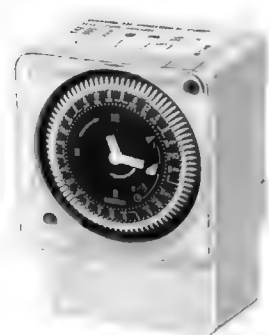
Approvals:

Federal Communications Commission: Transmission complies with FCC part 15.247 regulations regarding low power unlicensed transmitters

Product Number	Application	Network Communications	Compatible with:	Comments
T7790C1008	Module	LonWorks Bus	Q7790 Receiver	One mile open field range

* TRADELINE models • SUPER TRADELINE models

ST6008 Energy Management Timers



Type of Control: Electric

Type: Timers

Dimensions, Approximate: 4 1/4 in. high, 2 15/16 in. wide, 2 1/4 in. deep (108 mm high, 75 mm wide, 57 mm deep)

Electrical Connections: Screw terminals

Mounting Type: Surface

Provide 24-hour or 7-day time-based switching.

- Universal application with 24-hour or 7-day programming.
- Battery backup (quartz drive).
- Screw wiring terminals.
- Three-way override.
- Captive trippers.

Ambient Temperature Range: -40 F to +180 F (-40 C to +82 C)

Ambient Humidity Range (%RH): 0 to 95% RH

Frequency: 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E83486

Canadian Standards Association: Certified: File No. LR52379

Product Number	Clock Type	Minimum Timing	Switching	Switch Ratings
ST6008A1006	24-hours synchronous	15 min	1 SPDT	1350 W tungsten 21 A resistive @ 250 V
ST6008B1005	7-day synchronous	2 hrs	1 SPDT	22 A resistive @ 250 V 1350 W tungsten
ST6008C1004	7-day quartz (7 day battery reserve)	2 hrs	1 SPDT	23 A resistive @ 250 V 1350 W tungsten

* TRADELINE models • SUPER TRADELINE models

ST7009 Electronic Programmable Timers



Type of Control: Electric

Type: Timers

Dimensions, Approximate: 3 1/4 in. high, 3 in. wide, 2 1/16 in. deep (83 mm high, 76 mm wide, 52 mm deep)

Electrical Connections: Screw terminals

Mounting Type: Surface

Provide 24-hour or 7-day microprocessor-based switching.

- Universal 24-hour or 7-day programming accurate to the second.
- Built in program backup.
- Multiple on-off daily programs with unlimited flexibility.
- Program simplicity with a minimal number of keys and program steps.
- Holiday programming.
- Daylight Savings Time changeover in the spring and fall.
- Screw wiring terminals.

Ambient Temperature Range: -20 F to +140 F (-28 C to +60 C)

Ambient Humidity Range (%RH): 0 to 95% RH

Frequency: 50 Hz, 60 Hz

Approvals:

Underwriters Laboratories, Inc: File: E83486

Canadian Standards Association: File: E83486

Product Number	Clock Type	Minimum Timing	Switching	Switch Ratings
ST7009A1003	24-hour, 7-day (7 day battery reserve)	1 on-off	1 SPDT	1000 W tungsten @ 240 Vac, 16 A resistive @ 277 Vac
ST7009B1002	24-hour, 7-day (7 day battery reserve)	1 on-off	2 SPDT	1000 W tungsten @ 240 Vac, 16 A resistive @ 277 Vac
ST7009C1001	24-hour, 7-day (7 day battery reserve)	1 on-off	1 SPDT	1000 W tungsten @ 240 Vac, 16 A resistive @ 277 Vac
ST7009D1000	24-hour, 7-day (7 day battery reserve)	1 on-off	2 SPDT	1000 W tungsten @ 240 Vac, 16 A resistive @ 277 Vac

* TRADELINE models • SUPER TRADELINE models

Timers

ST6008; ST7009 Enclosures

Enclosure for ST6008 and ST7009 family of timers.

	Product Number	Description
	209534	NEMA 1 indoor enclosure for ST6008 or ST7009 timers
	209535	NEMA 3R Enclosure
* TRADELINE models • SUPER TRADELINE models		

Timer Accessories

OS Number	Description	Used With
192514	TIMER	
192544	SKIP SCREW PACK	
192546	Trippers for S6005D (consists of 8 sets of trippers, 8 on and 8 off trippers) 20 pkg per carton	S6005D
192607	TIMER-	
195698	TIMER	
195705	TRIPPER PACK	

T4039 Fan Coil Thermostat



Control line voltage valves of a fan coil unit in cooling, manual or automatic changeover heating-cooling systems.

- Directly operate one or two valves.
- Positive deadband separates heating and cooling circuits in automatic models.
- Includes allen wrench for cover and mounting screws.

Dimensions, Approximate: 4 5/8 in. high, 4 15/16 in. wide, 1 5/16 in. deep. (118 mm high, 125 mm wide, 33 mm deep.)

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: 4 in. square outlet box or 2-ganged outlet box

Supply Voltage (Vac and Hz): 120 to 277 Vac, 50, 60Hz

Display: No

Includes: Allen wrench for cover and mounting screws

Approvals:

Underwriters Laboratories, Inc: File No. E34436, Vol 2, dated 3-19-73; Guide No. XAPX

Canadian Standards Association: Certified

Accessories:

TG512A1009 Large Universal Thermostat Guard with clear cover and base, and opaque wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

TG512A1058 Large Universal Thermostat Guard with clear cover with hole for access to up/down buttons on thermostat.

TG512B1007 Large Universal Thermostat Guard with opaque cover, base, and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

TG512D1003 Large Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

Product Number	Application Type	Color	Changeover	Switch Position		Setting Temperature Range		Differential Temperature	
				System	Fan	(F)	(C)	(F)	(C)
T4039B1008	Cooling	Tan	—	ON-OFF	HI-MED-LO-OFF	55 F to 95 F, marked COOL-WARM	—	Approximately 2 F at midscale	Approximately 1 C at midscale
T4039H1005	Fan coil, automatic heat-cool changeover	Tan	Remote changeover switch is required to separate circuits in manual changeover heating-cooling models.	ON-OFF	—	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	
T4039J1026	Fan coil, automatic heat-cool changeover	Tan	Remote changeover switch is required to separate circuits in manual changeover heating-cooling models.	—	OFF-HI-LO, Off breaks cooling and fan circuits	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	
T4039M1004	4 pipe fan coil, automatic heat-cool changeover	Tan	Automatic	ON-OFF	HI-MED-LO	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	
T4039M1103	4 pipe fan coil, automatic heat-cool changeover	Premier White®	Automatic	ON-OFF	HI-MED-LO	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	
T4039S1016	4 pipe fan coil, manual heat-cool changeover	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	
T4039S1040	4 pipe fan coil, manual heat-cool changeover	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	55 F to 95 F, marked COOL-WARM	—	The differential from make of one contact to make of the opposite contact is 7 F (4C) maximum with a positive deadspot.	

* TRADELINE models • SUPER TRADELINE models

Thermostats—Fan Coil/Zone

T6069 Fan Coil Thermostat



T6069 thermostats control line voltage valves and/or blower motors on fan coil units in manual changeover heating/cooling systems. The thermostats feature a single System and Fan speed switch.

- Thermostat, system and fan control switches combined in one deluxe-styled unit.
- Available in classic gold or contemporary white styling.
- Language-free graphic symbols.
- Manual three-speed fan control on most models.
- Suitable for single or double gang electrical boxes.
- Operates one or two valves.
- Has cycled or constant fan control.

Dimensions, Approximate: 4 5/8 in. high, 4 1/2 in. wide, 1 7/8 in. deep. + 5/8 in projection into junction box (117 mm high, 114 mm wide, 47 mm deep + 15 mm projection into junction box)

Mounting: Mounts on 2 in. x 4 in. (50mm x 75 mm) single or double-ganged vertically-oriented outlet box.

Supply Voltage (Vac and Hz): 120 to 277 Vac 50/60 Hz

Approvals:

Underwriters Laboratories, Inc: Listed: File no. E47434

Canadian Standards Association: File No. LR1322.

Product Number	Application Type	Color	Changeover	Switch Position		Setting Temperature Range		Differential Temperature		Display	Includes
				System	Fan	(F)	(C)	(F)	(C)		
T6069A4002	2 pipe, cycled or constant fan	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	—	7 C to 28 C		1 C	No thermometer	—
T6069A4010	2 pipe, cycled or constant fan	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	44 F to 86 F	—	2 F		No thermometer	272804A Range Stop, locking cover kit
T6069B4000	4 pipe, constant fan	Premier White®	Manual	HEAT-OFF-COOL	HI-MED-LO	—	7 C to 28 C		1 C	No thermometer	—
T6069B4018	4 pipe, constant fan	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	44 F to 86 F	—	2 F		No thermometer	272804A Range Stop, locking cover kit
T6069C4008	4 pipe, cycled fan	Premier White®	Manual	HEAT-OFF-COOL	HI-MED-LO	—	7 C to 28 C		1 C	No thermometer	—
T6069C4016	4 pipe, cycled fan	Tan	Manual	HEAT-OFF-COOL	HI-MED-LO	44 F to 86 F	—	2 F		No thermometer	272804A Range Stop, locking cover kit
T6069D4006	2 pipe, seasonal auto changeover	Premier White®	Seasonal Auto with External Aquastat® Controller	ON-AUTO-OFF	HI-MED-LO	—	7 C to 28 C		1 C	No thermometer	—
T6069D4014	2 pipe, seasonal auto changeover	Tan	Seasonal Auto with External Aquastat® Controller	ON-AUTO-OFF	HI-MED-LO	44 F to 86 F	—	2 F		bimetal thermometer	272804A Range Stop, locking cover kit

* TRADELINE models • SUPER TRADELINE models

T6169 Fan Coil Thermostat



The T6169 thermostats control line voltage valves and/or blower motors on fan coil units in manual or automatic changeover, cooling, heating or cooling/heating systems. The thermostats feature a single fan and/or system manual switches.

- Combines thermostat, single system and/or fan control switch in one deluxe-styled unit.
- Three speed manual FAN control on some models.
- Fan can be wired for continuous ("ON") or cycled ("AUTO") operation.
- System switch OFF position breaks heating/cooling and fan circuits.
- Color-coded leadwire connections.
- Available in classic gold or Premier white® styling.
- Language-free graphic symbols.
- Suitable for single or double gang electrical boxes.

Dimensions, Approximate: 4 5/8 in. high, 4 1/2 in. wide, 1 7/8 in. deep. + 5/8 in projection into junction box (117 mm high, 114 mm wide, 47 mm deep + 15 mm projection into junction box)

Mounting: Mounts on 2 in. x 4 in. (50mm x 75 mm) single or double-ganged vertically-oriented outlet box.

Supply Voltage (Vac and Hz): 120 to 277 Vac 50/60 Hz

Approvals:

Underwriters Laboratories, Inc: Listed: File no. E47434

Canadian Standards Association: Certified: File No. LR1322.

Accessories

272735T Beige Mud ring

272804A Range stop and locking cover screws.

TG511A1000 Clear Acrylic Thermostat guard

TG511B1008 Opaque polystyrene Thermostat guard

TG511D1004 Painted metal Thermostat guard

Product Number	Application Type	Color	Changeover	Switch Position	Setting Temperature Range		Differential Temperature		Display	Replaces	Includes
				System and Fan	(F)	(C)	(F)	(C)			
T6169A4001	2 pipe, seasonal auto changeover	Premier White®	Seasonal Auto with External Aquastat® Controller	HI-MED-OFF-LO	—	7 C to 28 C		1 C	bimetal thermometer	T6169A 3000 Series T684A 2000 Series	—
T6169A4019	2 pipe, seasonal auto changeover	Tan	Seasonal Auto with External Aquastat® Controller	HI-MED-OFF-LO	44 F to 86 F	—	2 F		No thermometer	T6169A 3000 Series T684A 2000 Series	272804A Range Stop, locking cover kit
T6169B4009	2 pipe, seasonal	Premier White®	Manual	HEAT-OFF-COOL	—	7 C to 28 C		1 C	bimetal thermometer	T651A2xxx/ Q473A2xxx combination	—
T6169B4017	2 pipe, seasonal	Beige	Manual	HEAT-OFF-COOL	44 F to 86 F	—	2 F		bimetal thermometer	T651A2xxx/ Q473A2xxx combination	—
T6169C4015	2 pipe, seasonal	Beige	Remote Changeover	AUTO-OFF	44 F to 86 F	—	2 F		bimetal thermometer	T451A or T651A2xxx with Q473A	—

* TRADELINE models • SUPER TRADELINE models

Thermostats—Fan Coil/Zone

T6381; T6383; T6387 Electronic Fan Coil Thermostat



The T6380 series of electronic fan coil thermostats provide precision line voltage control of fan-forced, heating, ventilating and air conditioning equipment.

- Electronic temperature sensing provides energy-efficient, precision operation for maximum comfort.
- Vertical mounting configurations.
- Easy-to-use setpoint knob.
- System LED lights on call for heating or cooling. OFF de-energizes all connected loads.
- Three level fan speed selection.
- Constant, cycled or On-Auto selectable fan operation available.

Dimensions, Approximate: 4 3/4 in. high, 3 3/16 in. wide, 1 9/16 in. deep (122 mm high, 81 mm wide, 39 mm deep)

Display: System LED

Humidity Ratings: 5 to 95% RH, non-condensing

Approvals:

Underwriters Laboratories, Inc: Listed: File no. E47434

Canadian Standards Association: CSA Certified, File No. LR1322

Product Number	Application Type	Changeover	Supply Voltage	Switch Position		Setting Temperature Range	
				System	Fan	(F)	(C)
T6381A1009	2 pipe heat or cool only	Seasonal Auto with External Aquastat® Controller	120 V (110-130), 50/60 Hz	—	HI-OFF-MED-LO (cycled)	55 F to 90 F	—
T6381A2007	2 pipe heat/cool or 2 pipe heat or cool only	Seasonal Auto with External Aquastat® Controller	208-277V 50/60 Hz	—	HI-OFF-MED-LO (cycled)	55 F to 90 F	—
T6381B1007	2 or 4 pipe heat/cool, cycled fan	Manual	120 V (110-130), 50/60 Hz	HEAT-OFF-COOL	HI-MED-LO (cycled)	55 F to 90 F	—
T6381B2005	2 or 4 pipe heat/cool, cycled fan	Manual	208-277V 50/60 Hz	HEAT-OFF-COOL	HI-MED-LO (cycled)	55 F to 90 F	—
T6383A1007	2 pipe heat or cool only, constant fan	Seasonal Auto with External Aquastat® Controller	120 V (110-130), 50/60 Hz	—	HI-OFF-MED-LO (constant)	55 F to 90 F	—
T6383A2005	International 2 pipe heat or cool only, constant fan	International Seasonal Auto	208-277V 50/60 Hz	—	HI-OFF-MED-LO (constant)	55 F to 90 F	—
T6383B1005	2 or 4 pipe heat/cool, constant fan	Manual	120 V (110-130), 50/60 Hz	HEAT-OFF-COOL	HI-MED-LO (constant)	55 F to 90 F	—
T6383B2003	2 or 4 pipe heat/cool, constant fan	Manual	208-277V 50/60 Hz	HEAT-OFF-COOL	HI-MED-LO (constant)	55 F to 90 F	—
T6387A1003	2 pipe heat/cool	Seasonal Auto with External Aquastat® Controller	120 V (110-130), 50/60 Hz	ON-AUTO	HI-MED-LO	55 F to 90 F	—
T6387A2001	2 pipe heat/cool	Seasonal Auto with External Aquastat® Controller	208-277V 50/60 Hz	ON-AUTO	HI-MED-LO	55 F to 90 F	—

* TRADELINE models • SUPER TRADELINE models

T6574; T6575; T8574; T8575 Digital Fan-Coil Thermostat



T6570 Series Digital Fan-Coil thermostats provide line voltage on/off control for fans, valves, compressors or auxiliary electric heaters in fan-coil and small air-conditioner applications. T8570 Series provides low voltage control. Models are available for control of single stage air-conditioner and various fan-coil units:

- 2-pipe.
- 2-pipe with manual heat/cool changeover.
- 4-pipe with manual heat/cool changeover.
- 4-pipe with automatic heat/cool changeover.

All models are suitable for multiple applications. Changes in output wiring and external links between wiring terminals can configure the thermostat for the appropriate application. The fan can also be controlled from the thermostat. In some cases it is wired to run continuously and can be switched off with the On/Off switch. Other models can be installed with fan running continuously or cycling with the thermostat.

Compressors and auxiliary electric heaters can be controlled using a relay or contactor controlled by the thermostat.

- Simple user interface.
- Attractive modern styling ideal for offices or hotels.
- Digital display of ambient temperature, with user activated temperature display.
- Digital display shows mode icons when cooling or heating relays operate, or when energy savings mode is active.
- Push button setpoint adjustment.
- Switches allow manual control of system operation and fan speed.
- Energy savings mode - external energy savings input from time switch, occupancy sensors or hotel cardkey
- overrides comfort setpoint with setback heating or cooling setpoint.
- Energy savings input configurable, normally open or normally closed.
- Proportional plus integral (P+I) control algorithm for precision temperature regulation.
- Mounts directly onto wall or standard junction box or vertical junction box with optional adapter plate.
- Installer setup mode allows changes of operating parameters.
- Selectable C or F display.
- Adjustable deadband (some models) for heat and cool control.
- Selectable energy savings set

Dimensions, Approximate: 3 11/16 in. high, 4 3/16 in. wide, 1 7/16 in. deep. (94 mm high, 122 mm wide, 37 mm deep)

Display: LCD

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: Direct mounting on horizontal 2 x 4 in. (50mm x 75 mm) single gang electrical box. Mounts on vertical 2 x 4 in. or double-ganged electrical box with optional adapter plate (272878).

Approvals:

Canadian Standards Association: c/US Certified: File No. 163752

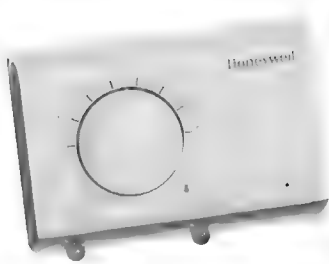
Product Number	Application Type	Color	Changeover	Supply Voltage (Vac and Hz)	Switch Position		Setting Temperature Range	
					System	Fan	(F)	(C)
T6574B1004	2 pipe heat or cool only	Premier White®	Automatic optional with external Aquastat® controller	120 V 50-60 Hz	ON-AUTO	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6574B3000	2 pipe heat or cool only	Premier White®	Automatic optional with external Aquastat® controller	208 V-277 V 50-60 Hz	ON-AUTO	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6575B1003	2 or 4 pipe heat/cool	Premier White®	Manual	120 V 50-60 Hz	HEAT-OFF-COOL	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6575B3009	2 or 4 pipe heat/cool	Premier White®	Manual	208 V-277 V 50-60 Hz	HEAT-OFF-COOL	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6575C1001	4 pipe heat/cool	Premier White®	Automatic, by room temperature	120 V 50-60 Hz	ON-OFF	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6575C3004	4 pipe heat/cool	Premier White®	Automatic, by room temperature	208 V-277 V 50-60 Hz	ON-OFF	HI-MED-LO	50 F to 90 F	10 C to 32 C
T6575D1009	4 pipe heat/cool	Premier White®	Automatic, by room temperature	120 V 50-60 Hz	ON-OFF	HI-MED-LO ON-OFF	50 F to 90 F	10 C to 32 C
T6575D3005	4 pipe heat/cool	Premier White®	Automatic, by room temperature	208 V-277 V 50-60 Hz	ON-OFF	HI-MED-LO ON-OFF	50 F to 90 F	10 C to 32 C
T8574B1000	2 pipe heat or cool only	Premier White®	Automatic optional with external Aquastat® controller	24 V 50-60 Hz	ON-AUTO	HI-MED-LO	50 F to 90 F	10 C to 32 C
T8575B1009	2 or 4 pipe heat/cool	Premier White®	Manual	24 V 50-60 Hz	HEAT-OFF-COOL	HI-MED-LO	50 F to 90 F	10 C to 32 C
T8575C1007	4 pipe heat/cool	Premier White®	Automatic, by room temperature	24 V 50-60 Hz	ON-OFF	HI-MED-LO	50 F to 90 F	10 C to 32 C
T8575D1005	4 pipe heat/cool	Premier White®	Automatic, by room temperature	24 V 50-60 Hz	ON-OFF	HI-MED-LO ON-OFF	50 F to 90 F	10 C to 32 C

* TRADELINE models • SUPER TRADELINE models

Thermostats—Fan Coil/Zone

T8381; T8383; T8387 Low Voltage Electronic Fan Coil Thermostat

The T8380 Series Thermostats consists of 24 Vac versions of the T6380 family, page 486, in a horizontal format.



Dimensions, Approximate: 3 3/16 in. high, 4 3/4 in. wide, 1 9/16 in. deep. (81 mm high, 122 mm wide, 39 mm deep)

Display: System LED

Humidity Ratings: 5 to 95% RH, non-condensing

Mounting: Supply Voltage (Vac and Hz): 20-30 Vac, 50-60Hz

Accessories:

209650A Premier White Universal cover plate, 7 3/8 in. (288 mm) x 5 3/4 in. (146 mm). Premier White

Product Number	Application Type	Color	Changeover	Switch Position		Setting Temperature Range	
				System	Fan	(F)	(C)
T8381A1005	2 pipe heat/cool	Premier White®	Seasonal Auto with External Aquastat® Controller	—	HI-OFF-MED-LO (cycled)	55 F to 90 F	—
T8381B1003	2 or 4 pipe heat/cool	Premier White®	Manual	HEAT-OFF-COOL	HI-MED-LO (cycled)	55 F to 90 F	—
T8383B1001	2 or 4 pipe Heat-Off-Cool	Premier White®	Manual	HEAT-OFF-COOL	HI-MED-LO (constant)	55 F to 90 F	—
T8387A1009	2 pipe heat or cool only2 pipe heat/cool	Premier White®	Seasonal Auto with External Aquastat® Controller	ON-AUTO	HI-MED-LO	55 F to 90 F	—

* TRADELINE models • SUPER TRADELINE models

Fan Coil Thermostat Accessories

OS Number	Description	Used With
137905E	Faceplate for T4039M beige model.	
138215A	Faceplate for T4039M beige model.	
272878	Adapter plate for mounting T6570 series fan coil thermostats to vertical, single or double-gang junction box.	

T641 Floating Control Room Thermostat



Dimensions, Approximate: 3 1/2 in. high, 5 1/4 in. wide, 2 1/16 in. deep (90 mm high, 133 mm wide, 52 mm deep)

Power Supply (Volt): 24 Vac

Frequency (Hz): 50/60 Hz

Mounting: Wall mounted

Accessories:

TG512A1009 Large Universal Thermostat Guard with clear cover and base, and opaque wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

Low voltage, 4-wire floating controller for damper actuators in single zone or variable air volume (VAV) applications.

- Designed for 7-minute ML6161 direct coupled actuators.
- Interface with DM7600B 7-minute zone dampers.
- T641A provides standard spdt floating control.
- T641B incorporates momentary system override switch that energizes an external relay for override in Building Management Systems.
- Mount horizontally on wall or on 221618 Adapter Plate for competitive replacements.

TG512A1058 Large Universal Thermostat Guard with clear cover with hole for access to up/down buttons on thermostat.

TG512B1007 Large Universal Thermostat Guard with opaque cover, base, and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

TG512D1003 Large Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

Product Number	Setpoint Temperature Range		Throttling Range		Output Signal	Output Signal Burden	Includes
	(F)	(C)	(F)	(C)			
T641A1005	45 F to 85 F	—	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	Internal setpoint with blank, locking cover
T641A1021	45 F to 85 F	—	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	External setpoint, less thermometer
T641A1039	45 F to 85 F	—	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	Warmer/Cooler setpoint, with thermometer
T641A1047	—	7 to 29 C	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	Warmer/Cooler setpoint, with thermometer; Celsius Model
T641A1054	—	7 to 29 C	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	External setpoint (C), less thermometer
T641C1011	45 F to 85 F	—	3 F	1.7 C	floating (SP3T) 7 minute	1 Amp @ 24 Vac Max	Warmer/Cooler setpoint, with thermometer

* TRADELINE models • SUPER TRADELINE models

Thermostats—Proportional

T6984; T7984 Electronic Modulating Control Thermostats



The microprocessor-based T6984 and T7984 Electronic Modulating Thermostats provide proportional plus integral (P+I) individual room control in zoned commercial heating, ventilating and air-conditioning (HVAC) systems. Typical applications include hydronic perimeter (heating and/or cooling), pressure-dependent variable air volume (VAV), and bypass box with or without terminal reheat.

- T6984 models provide floating control.
- T7984 model provides modulating (2 to 10 Vdc analog) control.
- Output status LED assists installer checkout.
- DIP switch provides selectable 75 F setpoint for heating (high limit) and cooling (low limit).
- Deluxe models (T6984D, T7884B,C) provide night setback feature triggered by external contact closure with 2-1/2 hour local timed override; Has reheat feature for fast/slow response selection to match heating system dynamics.
- Locking cover and range stops are standard; Horizontal and vertical covers are included for preferred mounting.

Dimensions, Approximate: 4 3/4 in. high, 3 3/16 in. wide, 1 9/16 in. deep (119 mm high, 80 mm wide, 39 mm deep)
Power Supply (Volt): 24 Vac

Frequency (Hz): 50/60 Hz
Mounting: Wall mounted

Product Number	Setpoint Temperature Range		Throttling Range		Output Signal	Output Signal Burden	Description	Includes
	(F)	(C)	(F)	(C)				
T6984A1059	55 F to 90 F	—	3 F	1.7 C	Floating (SP3T)	0.5 A running, 1.1 A inrush	standard	horizontal and vertical covers
T6984A1067	—	13 to 32 C	3 F	1.7 C	Floating (SP3T)	0.5 A running, 1.1 A inrush	standard	horizontal and vertical covers
T6984D1046	55 F to 90 F	—	3 F	1.7 C	Floating (SP3T), On-Off	0.5 A running, 1.1 A inrush	on/off output; dry contact night setback; internal or remote sensor; mode selection with jumper	horizontal and vertical covers
T6984D1053	—	13 to 32 C	3 F	1.7 C	Floating (SP3T), On-Off	0.5 A running, 1.1 A inrush	on/off output; dry contact night setback; internal or remote sensor; mode selection with jumper	horizontal and vertical covers
T6984E1043	55 F to 90 F	—	3 F	1.7 C	Floating (SP3T)	0.5 A running, 1.1 A inrush	automatic changeover between heat/cool; internal or remote sensor	horizontal and vertical covers
T6984E1050	—	13 to 32 C	3 F	1.7 C	Floating (SP3T)	0.5 A running, 1.1 A inrush	automatic changeover between heat/cool; internal or remote sensor	horizontal and vertical covers
T7984A1057	55 F to 90 F	—	3 F	1.7 C	2 to 10 Vdc	> 500 Ohm	standard	horizontal and vertical covers
T7984A1065	—	13 to 32 C	3 F	1.7 C	2 to 10 Vdc	> 500 Ohm	standard	horizontal and vertical covers
T7984B1055	55 F to 90 F	—	3 F	1.7 C	2 to 10 Vdc, On-Off	> 500 Ohm	on/off output; dry contact night setback; internal or remote sensor; mode selection with jumper	horizontal and vertical covers
T7984B1063	—	13 to 32 C	3 F	1.7 C	2 to 10 Vdc, On-Off	> 500 Ohm	on/off output; dry contact night setback; internal or remote sensor; mode selection with jumper	horizontal and vertical covers
T7984C1053	55 F to 90 F	—	3 F	1.7 C	2 x2-10 Vdc	> 500 Ohm	automatic changeover between heat/cool; internal or remote sensor	horizontal and vertical covers
T7984C1061	—	13 to 32 C	3 F	1.7 C	2 x2-10 Vdc	> 500 Ohm	automatic changeover between heat/cool; internal or remote sensor	horizontal and vertical covers

* TRADELINE models • SUPER TRADELINE models

T921 Proportional Thermostats



Provide low voltage, 3-wire control for valve motors, damper motors, and balancing relays in heating or cooling system applications.

- Bellows element adjusts potentiometer slider to regulate motor operation.
- Removable setting knob prevents unauthorized tampering with setpoint.

Dimensions, Approximate: 5 11/16 in high, 3 3/8 in wide, 2 1/4 in deep (144 mm high, 86 mm wide, 58 mm deep)

Mounting: Wall mounted

Accessories:

130224 KNOB-ADJUSTING

127246A adapter Plate Assembly for mounting all models vertically on horizontal outlet box, or T921A,B,E models horizontally (with

horizontal faceplate) on vertical outlet box. Faceplate for mounting horizontally.

135135A Horizontal, 56 F to 84 F.

135135B Horizontal, 13 C to 29 C.

190520A Cover assembly for T921, includes thermometer, range 60 to 90 degree F.

Product Number	Setpoint Temperature Range		Throttling Range		Output Signal	Includes
	(F)	(C)	(F)	(C)		
T921A1183	—	13 C to 29 C	2.5 F	1.4 C	135 Ohm potentiometer	Celsius model
* T921A1191	56 F to 84 F	—	2.5 F	1.4 C	135 Ohm potentiometer	Model, includes slotted sides and an add-on faceplate to allow thermostat to be mounted horizontally.
T921B1042	56 F to 84 F	—	2.5 F	1.4 C	135 Ohm potentiometer	Bank cover
T921G1005	56 F to 84 F	—	2.5 F	1.4 C	135 Ohm potentiometer	—

* TRADELINE models • SUPER TRADELINE models

Proportional Thermostat Parts and Accessories

OS Number	Description	Used With
100653A	Potentiometer Assembly for use with T921	T921
130224	Knob-adjusting	T921
23176CC	Potentiometer Assembly for T92	T92
32002811-001	Interface Module	
4074BKB	Envelope assembly for T921	T921
124355/0047	Adjustment screw for TA42, T921, T473	TA42, T921, T473
127246A	Adapter Plate Assembly for mounting all models vertically on horizontal outlet box, or T921A,B,E models horizontally (with horizontal faceplate) on vertical outlet box. Faceplate for mounting horizontally.	T921A,B,E
135135A	Horizontal, 56 F to 84 F.	T921
135135B	Horizontal, 13 C to 29 C.	T921
190520A	Cover assembly for T921, includes thermometer, range 60 to 90 degree F.	T921
221618	T641 Wall Plate	T641
272845	Sensor for T6984 or T7984, wall-mounted remote sensor	T6984D, T7984
272847	Sensor for T6984 or T7984, wall-mounted remote sensor	T6984D, T7984
135499	Setpoint Knob for T6051	T6051

Thermostats—Line Voltage

Q651 Switching Subbase



Dimensions, Approximate: 5 13/16 in. high, 3 3/16 in. wide, 11/16 in. deep. (148 mm high, 81 mm wide, 18 mm deep)

Electrical Ratings: 16 A @ 120 Vac Full Load
96 A @ 120 Vac Locked Rotor
8 A @ 240 Vac Full Load
48 A @ 240 Vac Locked Rotor

Electrical Connections: Frequency: 60 Hz

Voltage: 120 Vac

Approvals:

Underwriters Laboratories, Inc: Underwriters Laboratories Inc.
Listed: File No. E4436, Guide No. XAPX.

Canadian Standards Association: Certified

Provide manual system switching for T6051 and T6052 Thermostats.

- Provide positive OFF switching of the system.
- Mount vertically or horizontally on standard outlet box.
- Include pressure sensitive labels to identify switching positions.

Accessories:

TG512A1009 Large Universal Thermostat Guard with clear cover and base, and opaque wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

TG512A1058 Large Universal Thermostat Guard with clear cover with hole for access to up/down buttons on thermostat.

TG512B1007 Large Universal Thermostat Guard with opaque cover, base, and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

TG512D1003 Large Universal Thermostat Guard with Beige painted steel cover, opaque ring base and wallplate. Fits T8082, T8085, T8600, and most electronic thermostats.

Product Number	Application	Switch Position		Switching Action	Description	Includes
		System	Fan			
Q651A1009	Subbase for T6051A	See switch labels	See switch labels	Provide positive OFF switching of the system	Subbase for T6051A	Switch labels: HEAT-OFF-COOL, HEAT-OFF-FAN, AUTO-OFF-ON Pressure sensitive labels to identify switching positions
Q651B1008	Subbase for T6051A	See switch labels	See switch labels	Provide positive OFF switching of the system	Subbase for T6051A	Switch labels: AUTO-OFF-FAN Pressure sensitive labels to identify switching positions
* Q651C1007	Subbase for T6052B	See switch labels	See switch labels	Provide positive OFF switching of the system	Subbase for T6052B	Switch labels: HEAT-OFF, AUTO-OFF Pressure sensitive labels to identify switching positions
* TRADELINE models • SUPER TRADELINE models						

T451; T651 Medium Duty Line Voltage Thermostat



Control Line voltage valves, motors, contractors, electric heat, elements, duct furnaces, and fan coil units in heating/cooling systems.

- Automatic cooling and heating anticipation.
- Mount on standard vertical or horizontal outlet box.

Dimensions, Approximate: 4 1/2 in. high, 2 15/16 in. wide, 1 1/2 in. deep (switches and wiring terminals protrude into outlet box 3/4 in.) (115 mm high, 75 mm wide, 39 mm deep (switches and wiring terminals protrude into outlet box 19 mm))

Electrical Ratings: 9.8 FLA / 58.8 LRA @ 120 Vac

5.6 FLA / 33.6 LRA @ 208 Vac

4.9 FLA / 29.4 LRA @ 240 Vac

4.2 FLA / 25.2 LRA @ 277 Vac

22 A @ 120 - 240 Vac Resistive

19 A @ 277 Vac Resistive.

Electrical Connections: Flylead

Frequency: 50 Hz, 60 Hz

Sensor Element: Vapor filled dual diaphragm

Voltage: 120 Vac

Approvals:

Underwriters Laboratories, Inc: Underwriters Laboratories Inc.

Listed: File No. E47434, Guide No. XAPX.

Canadian Standards Association: CSA Certified, File No. LR1322

Product Number	Application	Color	Switch Position	Setting Temperature Range		Differential Temperature		Switching Action	Includes
			System	(F)	(C)	(F)	(C)		
T451A3005	Heating	Champagne gold face-plate with beige cover	—	44 F to 86 F	—	2 F	1 C	SPST- breaks on temperature rise	—
T451B3004	Heating	Champagne gold face-plate with beige cover	—	50 F to 86 F	—	2 F	1 C	SPST- breaks on temperature rise; with positive off	—
T651A3000	Heating and cooling	Champagne gold face-plate with beige cover	heating and cooling	44 F to 86 F	—	2 F	1 C	SPDT - breaks heating and makes cooling on temperature rise	High accuracy Dual Diaphragm sensor
• T651A3018	Heating and cooling	Champagne gold face-plate with beige cover	heating and cooling	44 F to 86 F	—	2 F	1 C	SPDT - breaks heating and makes cooling on temperature rise	Thermometer, range stops and locking cover screws, wall plate, horizontal scaleplate with no thermometer, high accuracy Dual Diaphragm sensor
T651A3026	Heating and cooling Celsius	Champagne gold face-plate with beige cover	heating and cooling	—	7 C to 28 C	2 F	1 C	SPDT - breaks heating and makes cooling on temperature rise	Thermometer, range stops and locking cover screws, wall plate, high accuracy Dual Diaphragm sensor

* TRADELINE models • SUPER TRADELINE models

Thermostats—Line Voltage

T6501; T6502 Heavy Duty Line Voltage Thermostats



Used to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems.

- Provide good line voltage comfort control.
- Use with Q651A,B subbases for system and fan switching.
- Removable setpoint knob locks setpoint and prevents tampering.
- With locking cover.

Dimensions, Approximate:

T6051A; T6052: 5 in. high, 3 1/2 in. wide, 1 5/8 in. deep
(127 mm high, 79 mm wide, 41 mm deep)

T6051B: 5 5/8 in. high, 6 3/8 in. wide, 4 7/16 in. deep
(143 mm high, 162 mm wide, 113 mm deep)

Electrical Ratings:

Heating: 120 Vac: 16 AFL, 96 ALR;

240 Vac: 8 AFL;

22A Resistive @ 120 Vac - 240 Vac, 19 A Resistive @ 277 Vac;

125 VA Pilot Duty

Cooling: 120 Vac: 8 AFL, 48 ALR;

240 Vac: 4 AFL;

125 VA Pilot Duty

Electrical Connections: Screw Terminal

Sensor Element: Vapor filled dual diaphragm

Frequency: 50 Hz, 60 Hz

Voltage: 120 Vac, 240 Vac, 277 Vac

Approvals:

Underwriters Laboratories, Inc: Underwriters Laboratories Inc.

Listed: File No. E4436, Guide No. XAPX.

Canadian Standards Association: CSA Certified: File no. LR1620

Replacement Parts:

135499 Setpoint Knob for T6051

Accessories:

135531D Horizontal Faceplate with setpoint scale thermometer.

135531J Scaleplate, vertical, Celsius, 10 C to 25 C.

135531K Scaleplate, horizontal, Celsius, 10 C to 25 C.

135651A Faceplate with setpoint scale, without thermometer.

135652AA Blank Faceplate (without setpoint scale, without thermometer).

138541A Mounting plate (gold) and screws. 23394B, locking cover to outlet box.

23394B Locking guard for T42, T92, T451, T498, T651, T4051, T6051, T6052

Product Number	Application	Color	Setting Temperature Range		Differential Temperature		Switching Action	Includes
			(F)	(C)	(F)	(C)		
* T6051A1016	Heating and cooling	Plastic cover, tan	50 F to 80 F	—	1 F	0.6 C	SPDT	Locking cover
T6051B1006	Explosion-proof, Heating and cooling	Plastic cover, tan	46 F to 84 F	—	1 F	0.6 C	SPDT	Explosion proof housing
* T6052A1015	Two stage heating or two stage cooling	Plastic cover, tan	50 F to 80 F	—	Stage 2 Heat, Stage 1 Cool: 3.2 F; Stage 1 Heat, Stage 2 Cool: 2.5 F	Stage 2 Heat, Stage 1 Cool: 1.8 C; Stage 1 Heat, Stage 2 Cool: 1.4 C	2 SPDT switches	Horizontal mounting adapter
T6052A1023	Two stage heating or two stage cooling	Plastic cover, tan	—	10 C to 27 C	Stage 2 Heat, Stage 1 Cool: 3.2 F; Stage 1 Heat, Stage 2 Cool: 2.5 F	Stage 2 Heat, Stage 1 Cool: 1.8 C; Stage 1 Heat, Stage 2 Cool: 1.4 C	2 SPDT switches	Locking cover, Celsius scaleplate
* T6052B1013	Heating and cooling, auto changeover	Plastic cover, tan	50 F to 80 F	—	Stage 2 Cool: 3.2 F; Stage 1 Heat: 2.5 F	Stage 1 Heat: 1.4 C; Stage 2 Cool: 1.8 C	2 SPDT switches	Auto changeover, horizontal mounting adapter, locking cover
T6052B1021	Heating and cooling, auto changeover	Plastic cover, tan	—	10 C to 27 C	Stage 2 Cool: 3.2 F; Stage 1 Heat: 2.5 F	Stage 1 Heat: 1.4 C; Stage 2 Cool: 1.8 C	2 SPDT switches	Auto changeover, celsius scaleplate, locking cover

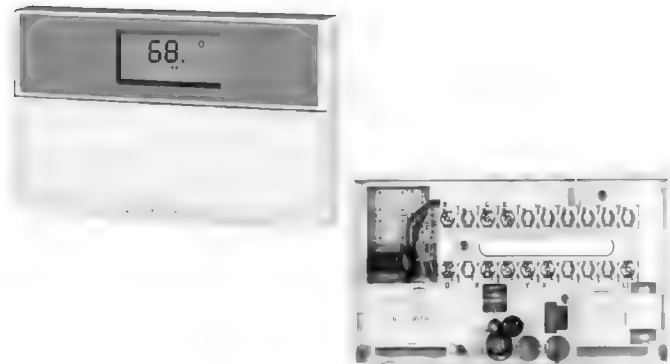
* TRADELINE models • SUPER TRADELINE models

Line Volt Thermostat Accessories

OS Number	Description
135531D	Horizontal Faceplate with setpoint scale thermometer.
135531J	Scaleplate, vertical, Celsius, 10 C to 25 C.
135531K	Scaleplate, horizontal, Celsius, 10 C to 25 C.
135651A	Faceplate with setpoint scale, without thermometer.
135652AA	Blank Faceplate (without setpoint scale, without thermometer).
138541A	Mounting plate (gold) and screws. 23394B, locking cover to outlet box.
199242	Wallplate covers series 1000 T694 wall marks when installing series 2000.
199923AA	Plastic cover for T6051/T6052 with thermometer and setpoint scale. With ground strap.
199923AB	Plastic cover for T6051/T6052 with setpoint scale no thermometer. With ground strap.
199923AC	Blank plastic cover for T6051/T6052 with ground strap.
199944	Flushmount adaptor T651/T451.
220124A	Faceplate, vertical, Fahrenheit scale, for T651 models with thermometer
220124B	Faceplate, vertical, Celsius scale, for T651 models with thermometer.
220124C	Faceplate, horizontal, Fahrenheit scale, for T651 models with thermometer.
220124D	Faceplate, horizontal, Celsius scale, for T651 models with thermometer.
220125A	Faceplate, horizontal, Fahrenheit scale, for T651 models without thermometer.
220125B	Faceplate, vertical, Fahrenheit scale, for T651 models without thermometer.
220125C	Faceplate, horizontal, Celsius scale, for T651 models without thermometer.
220125D	Faceplate, vertical, Celsius scale, for T651 models without thermometer.
220126A	Faceplate, horizontal, blank (for T651 models without thermometer.)
220126B	Faceplate, vertical, blank (for T651 models without thermometer.)
220140A	Cover Assembly; includes faceplate, for T451 and T651 without thermometer.
220213	WALLPLATE MDSE

Thermostats—Non-Programmable

T7100/Q7100 Electronic Non-Programmable Commercial Thermostat and Subbase



Commercial non-programmable thermostats and subbases for conventional single-stage and multistage equipment and heat pumps.

- EEPROM memory chip stores all settings in the event of a power outage.
- Two-piece design and large wiring terminals speed installation.
- Field configurable: Degree F or C temperature display; Override setting for off-hours use of the building.
- Adjustable 0-15 degree offset capability based on remote clock or occupancy sensor input.
- Precise 1 degree F temperature control for improved comfort.
- Models available with manual or auto changeover.
- Taupe color.

	Product Number	Application Type	Application Size	Color	Compatible with	Switching	Comments	Includes
*	T7100F1006	Conventional systems	Determined by subbase (Q7100)	Taupe	Q7100A,C subbase	System: Em. Heat-Heat-Off-Cool-Auto, Fan: On-Auto	Provides the capability for optional remote sensors	—
	T7100F1105	Heat Pump Systems, Conventional systems	Determined by subbase (Q7100)	Taupe	Q7100 Subbase	selectable changeover	No logo	—
*	Q7100A1010	Conventional systems	2 Heat / 2 Cool	Taupe	T7100D,F Thermostats (not T7300)	Determined by the chosen thermostat	—	Inputs for remote clock for occupancy sensor O and B terminals
*	Q7100C1008	Heat Pump Systems	2 Heat / 2 Cool	Taupe	T7100E,F Thermostats (not T7300)	Determined by the chosen thermostat	—	Inputs for remote clock for occupancy sensor O and B terminals; 1 check LED and 1 configurable LED
*	Q7100C1073	Heat Pump Systems	3 Heat / 2 Cool	Taupe	T7100E,F Thermostats (not T7300)	Determined by the chosen thermostat	—	Inputs for remote clock for occupancy sensor O and B terminals; 1 check LED and 1 configurable LED
* TRADELINE models • SUPER TRADELINE models								

T7200 Programmable Commercial Thermostat



Used for single zone heating, ventilating and air conditioning (HVAC) equipment.

- Directly replaces most single-stage thermostats.
- Provide 12- or 24-hour time for-mat and continuous or intermittent fan operation.
- Requires no subbase.

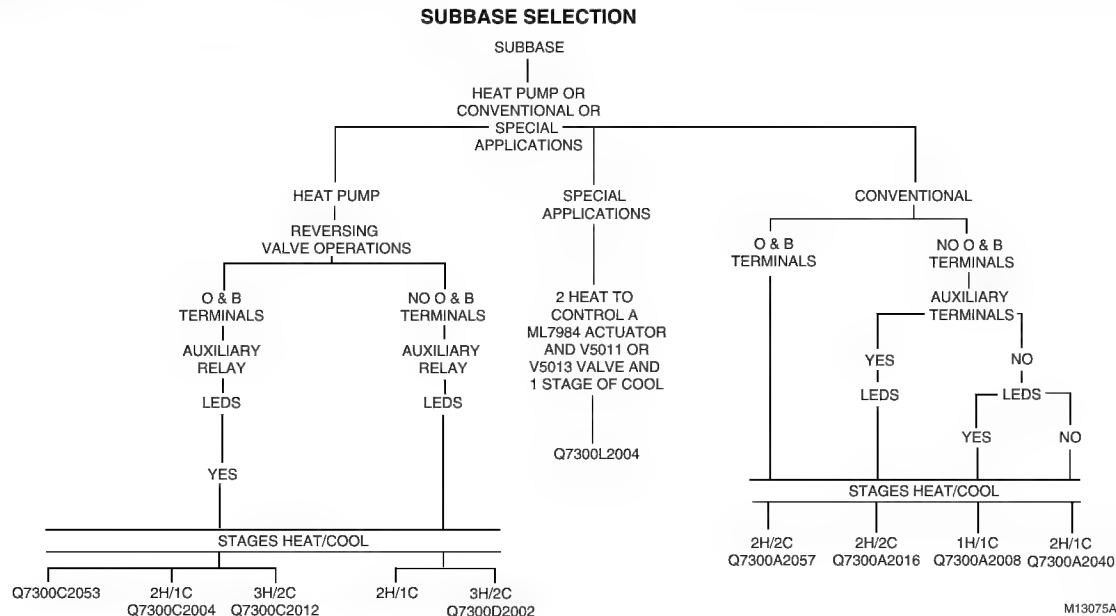
- T7200 is a 1 heat, 1 cool or 1 compressor stage, non-switching, auto changeover thermostat.
- 7-day programming: 2 occupied/unoccupied periods per day.
- Individual temperature set points for: Occupied heat and cool; Unoccupied heat and cool.
- Proportional plus integral control eliminates temperature fluctuations.
- Intelligent Recovery™ automatically optimizes start time depending on building load.
- Intelligent Fan™ energizes only fan on a call for heating/cooling during unoccupied periods.
- Concealed keyboard lockout switch and locking cover.
- Automatic heat/cool changeover.
- 3-hour override from unoccupied to occupied plus automatic return to programmed scheduling.
- Includes integral sensor and wallplate.
- Continuous unoccupied key.
- Battery backup saves program and maintains clock times during power failure.

	Product Number	Application Type	Application Size	Color	Switching	Comments	Includes
*	T7200D2008	Conventional systems	1 Heat / 1 Cool	Taupe	Fan: Auto, System: Auto	Timing between stages: 2 min on/off	Wallplate for 1 Heat / 1 Cool. Terminal designations Rc,Rh,W,Y,G,X
*	T7200E2005	Heat Pump Systems	1 Heat / 1 Cool	Taupe	Fan: On-Auto, System: Heat-Off-Cool-Auto	Timing between stages: 2 min on; 4 min off	Wallplate for 1 Heat / 1 Cool. Terminal designations R,Y,G,O,X
* TRADELINE models • SUPER TRADELINE models							

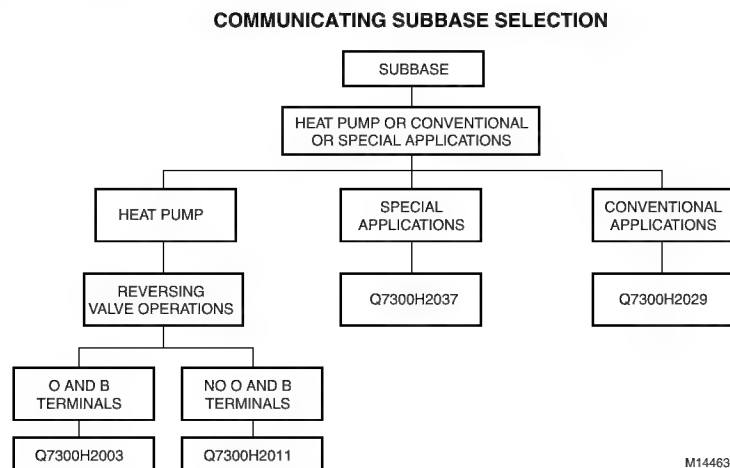
Thermostats—Programmable and Communicating

T7300/Q7300 System Component Selection

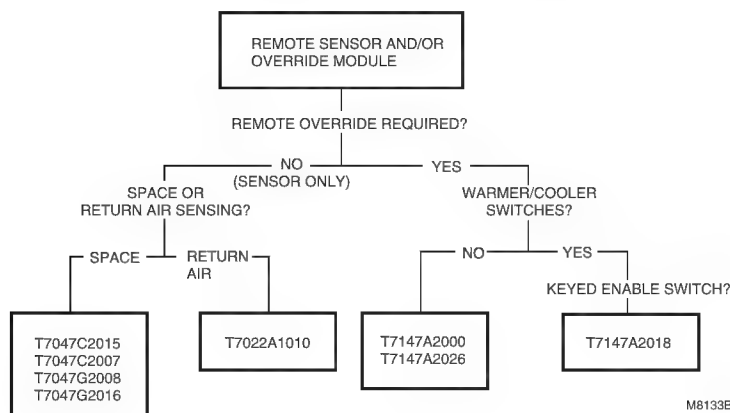
1. **SUBBASE SELECTION**—follow the chart below to choose the appropriate subbase for use with the T7300 thermostat. Order Q7300 Subbase separately from T7300 Thermostat.



2. **COMMUNICATING SUBBASE SELECTION**—follow the chart below to choose the appropriate communicating subbase for use with the T7300F thermostat. Order Q7300 separately from T7300 Thermostat.



3. **REMOTE SENSOR AND OVERRIDE MODULE SELECTION**—use the following chart to select a remote sensor and override module if desired.



Thermostats—Programmable and Communicating

T7300D-F/Q7300A-H,L Series 2000 Programmable Commercial Thermostat and Subbase



The T7300 Thermostats and Q7300 Subbases control commercial single zone heating, ventilating and air conditioning (HVAC) equipment.

- One model can be used for single-stage and multi-stage applications.
- 7-day programming; 2 occupied/unoccupied periods per day.
- Individual temperature set points for: Occupied heat and cool; Unoccupied heat and cool.
- Proportional plus integral control eliminates temperature fluctuations.
- Intelligent Recovery™ automatically optimizes start time depending on building load.
- Intelligent Fan™ energizes fan only on call for heating or cooling during unoccupied periods.
- Automatic heat/cool changeover.
- Keyboard lockout eliminates tampering.
- One thermostat can be used for heat pump or conventional control (T7300F only).
- Optional remote sensors and override capability.
- Configurable to vary fan and reversing valve operation.
- Use with Q7300 to interface with C7400/W7459 economizer system for total integration of rooftop control.
- Convenient overrides allow temporary changes.
- No batteries required. Program settings are stored in permanent memory and are maintained during power failures

	Product Number	Application Type	Application Size	Color	Network Communications	Compatible with	Switching	Includes
*	T7300D2007	Conventional systems	Determined by subbase (Q7300)	Taupe	None	Q7300A,G,or L series 2000 subbase	Fan: On-Auto, System: Heat-Off-Cool-Auto	—
*	T7300E2020	Heat Pump Systems	Determined by subbase (Q7300)	Taupe	None	Q7300 series 2000C,D subbase	System: Em. Heat-Heat-Off-Cool-Auto, Fan: On-Auto	—
*	T7300F2002	Heat Pump Systems Conventional systems	Determined by subbase (Q7300)	Taupe	LonWorks Bus	Q7300 series 2000 subbase	Fan: Auto, System: Auto	—
*	T7300F2010	Heat Pump Systems Conventional systems	Determined by subbase (Q7300)	Taupe	LonWorks Bus	Q7300 series 2000 subbase	System: Em. Heat-Heat-Off-Cool-Auto, Fan: On-Auto	—
	T7300F2135	Heat Pump Systems Conventional systems	Determined by subbase (Q7300)	Taupe	—	Q7300 series 80 subbase	System: Em. Heat-Heat-Off-Cool-Auto, Fan: On-Auto	—
*	Q7300A2008	Conventional systems	1 Heat / 1 Cool	Taupe	None	T7300D or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	—
*	Q7300A2016	Conventional systems	2 Heat / 2 Cool	Taupe	None	T7300D or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	Auxiliary Relay Output
*	Q7300A2057	Conventional systems	2 Heat / 2 Cool	Taupe	None	T7300D or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	Provides O and B terminals for dampers, valves, etc.
*	Q7300C2004	Heat Pump Systems	1 Stage compressor heat pump with auxiliary heat and emergency heat	Taupe	None	T7300E or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	N.O. Aux relays. Provides O and B terminals for dampers, valves, etc.
*	Q7300C2012	Heat Pump Systems	2 Stage compressor heat pump with auxiliary heat and emergency heat	Taupe	None	T7300E or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	N.O. Aux relays. Provides O and B terminals for dampers, valves, etc.
*	Q7300C2053	Heat Pump Systems	2 Stage compressor heat pump with auxiliary heat and emergency heat	Taupe	None	T7300E or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	Provides O and B terminals for dampers, valves, etc.
* TRADELINE models • SUPER TRADELINE models								

Thermostats—Programmable and Communicating

	Product Number	Application Type	Application Size	Color	Network Communications	Compatible with	Switching	Includes
*	Q7300D2002	Heat Pump Systems	2 Stage compressor heat pump with auxiliary heat and emergency heat	Taupe	None	T7300E or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	N.O. Auxiliary Relay
*	Q7300D2010	Heat Pump Systems	1 Stage compressor heat pump with auxiliary heat and emergency heat	Taupe	None	T7300E or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	N.O. Auxiliary Relay
*	Q7300G2005	Conventional systems	3 Heat / 3 Cool	Taupe	None	T7300D or T7300F Series 2000 Thermostats	Determined by the chosen thermostat	N.O. Auxiliary Relay
*	Q7300H2003	Heat Pump Systems	3 Heat / 2 Cool	Taupe	LonWorks Bus	T7300F Series 2000 Thermostats ONLY	Determined by the chosen thermostat	Provides O and B terminals EB terminals for LonWorks bus connection
*	Q7300H2011	Heat Pump Systems	3 Heat / 2 Cool	Taupe	LonWorks Bus	T7300F Series 2000 Thermostats ONLY	Determined by the chosen thermostat	EB terminals for LonWorks bus connection
*	Q7300H2029	Conventional systems	3 Heat / 3 Cool	Taupe	LonWorks Bus	T7300F Series 2000 Thermostats ONLY	Determined by the chosen thermostat	EB terminals for LonWorks bus connection
*	Q7300H2037	Conventional systems	2 Heat / 1 Cool	Taupe	LonWorks Bus	T7300F Series 2000 Thermostats ONLY	Determined by the chosen thermostat	EB terminals for LonWorks bus connection
*	Q7300L2004	Conventional systems	2 Heat / 1 Cool	Taupe	None	T7300 Series 2000 Thermostats	Determined by the chosen thermostat	single or 2 speed fan control; pump interlock relay; damper relay.

* TRADELINE models • SUPER TRADELINE models

T7350 Commercial Programmable Thermostats



The T7350 Thermostats control commercial single- or multi-stage conventional and heat pump systems.

- 7-day programming.
- Two Occupied and two Not Occupied periods per day.
- Thermostat Interface Module (TIM) connections to thermostat from PDA for advanced configuration, programming, keypad lockout, etc. can be made with thermostat mounted.
- Individual heat and cool setpoints available for Occupied and Not Occupied periods.
- P+I+D control minimizes temperature fluctuations.
- Recovery ramping control automatically optimizes equipment start times based on building load.
- Universal Versaguard™ Thermostat guards available.
- Convenient overrides allow temporary setpoint changes.
- Keypad multi-level lockout available with all models.
- Remote sensor capability for temperature (including outdoor air and discharge air) and humidity sensors.
- Auxiliary subbase contact typically interface with a Honeywell Economizer System (for total rooftop control integration) or act as dehumidification output.

	Product Number	Application Type	Application Size	Color	Network Communications	Switching	Comments
	T7350A1004	Heat Pump Systems, Conventional systems	1 Heat / 1 Cool	White	PDA Serial port	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	—
	T7350B1002	Heat Pump Systems, Conventional systems	2 Heat / 2 Cool	White	PDA Serial port	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Remote Temp, Outdoor, Discharge Air Sensor capability
	T7350D1008	Heat Pump Systems, Conventional systems	3 Heat / 3 Cool	White	PDA Serial port	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Remote Temp, Outdoor, Discharge Air, Humidity, Occupancy Sensor capability

* TRADELINE models • SUPER TRADELINE models

Thermostats—Programmable and Communicating

Y7300 Communicating Commercial Thermostat



The T7300 Thermostats and Q7300 Subbases control commercial single zone heating, ventilating and air conditioning (HVAC) equipment.

- One model can be used for single-stage and multi-stage applications.
- 7-day programming; 2 occupied/unoccupied periods per day.
- Individual temperature set points for: Occupied heat and cool; Unoccupied heat and cool.
- Proportional plus integral control eliminates temperature fluctuations.
- Intelligent Recovery™ automatically optimizes start time depending on building load.
- Intelligent Fan™ energizes fan only on call for heating or cooling during unoccupied periods.
- Automatic heat/cool changeover.
- Keyboard lockout eliminates tampering.
- One thermostat can be used for heat pump or conventional control (T7300F only).
- Optional remote sensors and override capability.
- Configurable to vary fan and reversing valve operation.
- Use with Q7300 to interface with C7400/W7459 economizer system for total integration of rooftop control.
- Convenient overrides allow temporary changes.
- No batteries required. Program settings are stored in permanent memory and are maintained during power failures

	Product Number	Application Type	Application Size	Color	Network Communications	Switching	Includes
*	Y7300M2002	Heat Pump Systems	3 Heat / 2 Cool	Taupe	LonWorks Bus	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Q7300H2002 subbase, T7300F2010 Thermostat, C7046C1000 Sensor
*	Y7300M2010	Heat Pump Systems	3 Heat / 3 Cool	Taupe	LonWorks Bus	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Q7300H2011 Subbase, T7300F2010 Thermostat, C7046C1000 Sensor
*	Y7300M2028	Conventional systems	3 Heat / 3 Cool	Taupe	LonWorks Bus	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Q7300H2029 Subbase, T7300F2010 Thermostat, C7046C1000 Sensor
*	Y7300M2036	Conventional systems	2 Heat / 1 Cool	Taupe	LonWorks Bus	System: Em. Heat-Heat-Off-Cool-Auto Fan: On-Auto	Q7300H2037 Subbase, T7300F2010 thermostat, C7046C1000 Sensor
* TRADELINE models • SUPER TRADELINE models							

Excel LonStat™

Excel LonStat™ is a low-cost configuration software application for networking T7300F Thermostats (Revision 4) with Q7300H Communicating Subbases in a light commercial building system. LonStat™ allows users to set and monitor temperature setpoints and schedules, customizes the number of heating and cooling stages for their application, set mechanical overrides, and select energy-saving options.

- Local and remote configuration of T7300 Communicating Thermostats.
- Navigation wizard guides the user through installer setup.
- Convenient, easy-to-follow menus allows users to quickly configure a single thermostat or a thermostat network.
- Browser look and feel with Microsoft® Windows™ 95 platform.
- Software screens display familiar T7300F commands and selections.
- View and customize temperature setpoints and schedules.


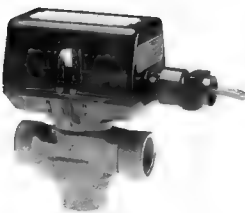
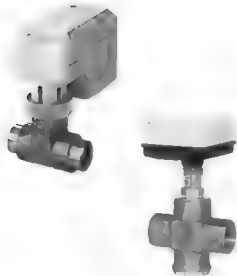
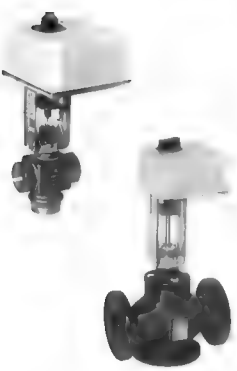
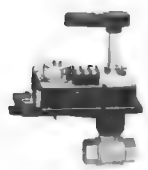

	Product Number	Application Type	Compatible with	Description
	ZL7300A1009	Commissioning software	T7300F/Q7300H	Excel LonStat configuration software for T7300F/Q7300H thermostats
* TRADELINE models • SUPER TRADELINE models				

Commercial Thermostat Accessories

OS Number	Description
209651A	Wallplate
50000083-001	Thermostat Interface Module
50000452-001	Troubleshooting Cable

Valves and Valve Actuators—Selection Guide

Valve Quick Selection Guide

	Fan Coil Valve	1/2...1 in.	2-Way	Sweat; NPT,	VU52; VU53
			3-Way	Inverted Flare	VU54
	Fan Coil Actuator	Spring Return	24 Vac	Two position	VU843; VU844
			120 Vac		VU443; VU444
	Cartridge Cage Valve	1/2...1-1/4 in.	2-Way	Sweat; NPT	VCZA; VCZB
			3-Way		VCZM; VCZN
	Cartridge Cage Actuator	Non-Spring Return	24 Vac	Two position	VC8114
			120 Vac		VC4011
			24 Vac	Floating	VC6934
			24 Vac	Modulating	VC7934
		Power Failure Return	24 Vac	Modulating	VC7936
			24 Vac	Floating	VC6936
	Cartridge Globe Valve	1/2...3/4 in.	2-Way	Sweat; NPT	V5852; V5862
			3-Way		V5853; V5863
		1...1-1/2 in.	2-Way	NPT	V5862
			3-Way		V5863
	Cartridge Globe Actuator	Non-Spring Return	24 Vac	Floating	M6410A
				Modulating	M7410F
		Spring Return		Floating	M6435A
				Modulating	M7435F
	Threaded Globe Valve	1/2...3 in.	2-Way	NPT	V5011N; V5011F; V5011G
		1/2...2 in.	3-Way		V5013N
	Flanged Globe Valve	2-1/2...6 in.	2-Way	Flanged	V3350; V3450; V3351; V3451; V5051
			3-Way	Flanged	V3360; V3460; V3361; V3461
	Linear Valve Actuator	Non-Spring Return	24 Vac	Floating	ML6420; ML6421
				Modulating	ML7420; ML7421
		Spring Return		Floating	ML6425
				Modulating	ML7425
	Ball Valve	1/2...2 in.	2-Way	NPT	VB2...
			3-Way		VB3...
	Butterfly Valve	2...20 in.	2-Way	Flanged	VF52; VH52
			3-Way		VF53; VH53

Control Valve Applications

		Pipe Size (Inches)												
		1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	8... 20	
Central Plant	Thermal Storage						Butterfly Valves							
								Flanged Globe Valve						
	Cooling Towers						Butterfly Valves							
								Flanged Globe Valve						
	Boiler System						Butterfly Valves							
								Flanged Globe Valve						
	Chiller System	Threaded Globe Valve												
							Butterfly Valves							
							Flanged Globe Valve							
Heat Reclaim	Threaded Globe Valve													
Greenhouse Applications	Threaded Globe Valve													
Heat Exchange (Steam)	Threaded Globe Valve													
Air Handling Units	Humidifiers	Threaded Globe Valve												
		Ball Valve												
								Flanged Globe Valve						
	AHU Heating and Cooling Coils	Threaded Globe Valve												
		Ball Valve												
								Flanged Globe Valve						
Unitary Equipment	Fan Coil Units	VC Fan Coil Valve												
		VU Cartridge Cage Valve												
		Cartridge Globe Valve												
	Unit Ventilators	VC Cartridge Cage Valve												
		VU Fan Coil Valve												
		Cartridge Globe Valve												
	Unit Heaters	VC Cartridge Cage Valve												
		VU Fan Coil Valve												
		Cartridge Globe Valve												
	Reheat Coils	VC Cartridge Cage Valve												
		VU Fan Coil Valve												
		Cartridge Globe Valve												
	Blower Coils	VU Fan Coil Valve												
		VC Cartridge Cage Valve												
	Convectors	VU Fan Coil Valve												
		VC Cartridge Cage Valve												
		Cartridge Globe Valve												
	Radiant Panels	VC Cartridge Cage Valve												
		VU Fan Coil Valve												
		Cartridge Globe Valve												
	Chilled Ceiling	VC Cartridge Cage Valve												
		Cartridge Globe Valve												
		1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6	8... 20	

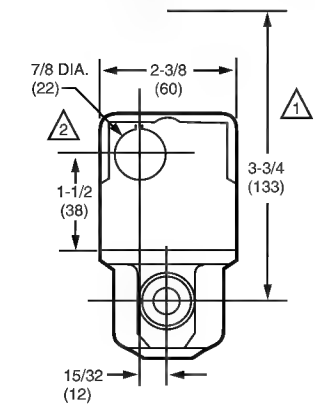
Valve Actuators, Fan Coil

VU443; VU444; VU843; VU844 Fan Coil Actuators

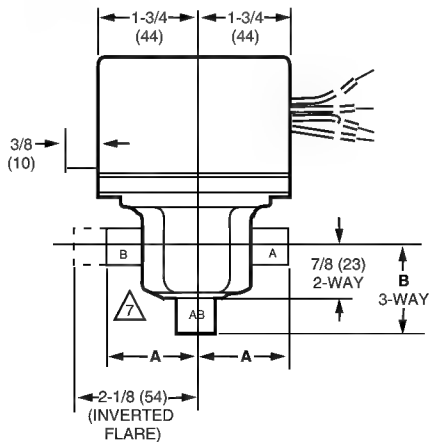


- The VU443, VU444 and VU843, VU844 Fan Coil Valve Actuators are used in conjunction with the VU52, VU53 and VU54 valves for controlling the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors. These valves are humidity resistant and are suitable for use in condensing, non-corrosive environments.
- Compact construction for easy installation.
 - Fits under the cover of most baseboard convectors with actuator fitted to valve body.
 - One-button, quick release. Secure 3-point, metal latch to valve body.
 - Spring return operation.
 - Stainless steel case and aluminum cover.
 - Line or low voltage, rust-resistant motors.
 - Manual opener for valve operation on power failure. Valve returns to automatic position when power is restored.
 - Actuator may be reinstalled or serviced without draining the system or disassembling the valve.
 - Connecting leads available up to 8 feet (2.4m) long.
 - Slotted conduit hole for faster wiring.

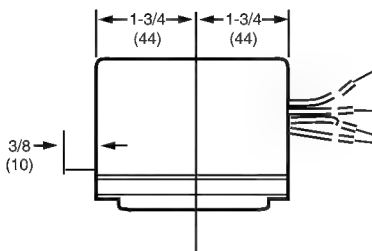
Dimension Diagrams



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- 2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/6 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-3/8 (35)	1-5/16 (33)
3/4 IN. NPT	1-11/16 (43)	1-7/16 (37)

M18261

Application: Hot Water, Chilled Water, 50% Glycol
Type of Control: Electric
Dimensions, Approximate: 2 3/8 in. high, 3 1/2 in. wide, 2 3/8 in. wide (62 mm high, 88 mm wide, 60 mm deep)
Electrical Connections: 6 in. motor leads

Ambient Temperature Range: 34 to 125 F ambient at 200 F Fluid (52 C ambient at 93 C Fluid)
Maximum Differential Pressure: Depends on Cv rating of valve
Enclosure Trim: Stainless Case, Aluminum Cover
Approvals:
Canadian Standards Association: Certified C/US

Product Number	Control Signal	Auxiliary Switch Ratings	Internal Auxiliary Switch	Voltage	Power Consumption Driving	Leadwires	Run Time	Used With
VU443A1008	SPST	None	None	120 V 50/60 Hz	5 Watts	6 inch	15 sec	2-way NC VU valve body (VU53)
VU443A1024	SPST	None	None	208 V 50/60 Hz	5 Watts	18 inch	15 sec	2-way NC VU valve body (VU53)
VU443A1057	SPST	None	None	277 V 60 Hz	5 Watts	18 inch	15 sec	2-way NC VU valve body (VU53)
VU443A1115	SPST	None	None	230 V 50 Hz 240 V 60 Hz	5 Watts	6 inch	15 sec	2-way NC VU valve body (VU53)
* TRADELINE models • SUPER TRADELINE models								

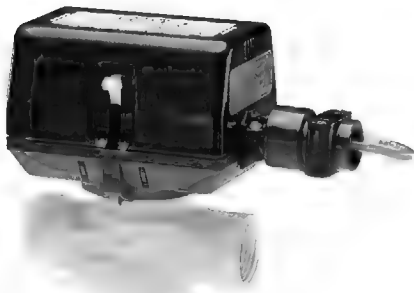
Valve Actuators, Fan Coil

Product Number	Control Signal	Auxiliary Switch Ratings	Internal Auxiliary Switch	Voltage	Power Consumption Driving	Leadwires	Run Time	Used With
VU443E1009	SPST	Inductive: 2.2 A from 5 to 110 Vac, 1.0 A from 110 to 277 Vac	SPST x 1	120 V 50/60 Hz	5 Watts	18 inch	15 sec	2-way NC VU valve body (VU53)
VU444A1007	SPST	None	None	120 V 50/60 Hz	5 Watts	6 inch	15 sec	2-way NO (VU52) or 3-way VU valve body (VU54)
VU444A1098	SPST	None	None	277 V 60 Hz	5 Watts	18 inch	15 sec	2-way NO (VU52) or 3-way VU valve body (VU54)
VU444A1106	SPST	None	None	230 V 50 Hz 240 V 60 Hz	5 Watts	6 inch	15 sec	2-way NO (VU52) or 3-way VU valve body (VU54)
VU843A1004	SPST	None	None	24 V 50/60 Hz	5 Watts	6 inch	15 sec	2-way NC VU valve body (VU53)
VU844A1003	SPST	None	None	24 V 50/60 Hz	5 Watts	6 inch	15 sec	2-way NO (VU52) or 3-way VU valve body (VU54)

* TRADELINE models • SUPER TRADELINE models

Valve Actuators

VC Series Actuators



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage SPST or SPDT or floating or modulating controller such as a room thermostat, Aquastat control, flow switch or a 0/2 to 10 Vdc controller.

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one meter cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Dimensions, Approximate: 3.56 in. high, 3.72 in. wide, 2.69 in. deep (90 mm high, 94 mm wide, 68 mm deep)

Type of Control: Electric

Feedback Signal: No

Ambient Temperature Range: 32 F to 150 F (0 C to 55 C)

Product Number	Control Signal	Auxiliary Switch Ratings	External Auxiliary Switches Available	Internal Auxiliary Switch	Power Consumption Driving	Run Time	Replaces	Cable Lengths		Includes
								(inch)	(mm)	
VC2111ZZ11	Two position, SPDT	—	No	0	6 VA 24 V 60 Hz	6 sec.		40 in.	1 m	—
VC2114ZZ11	Two position, SPDT	—	No	0	6 VA 24 V 60 Hz	6 sec.	VC2111ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter
VC2711ZZ11	Two position, SPDT	2.2 A Pilot Duty	Yes	1	6 VA 24 V 60 Hz	6 sec.		40 in.	1 m	—
VC2714ZZ11	Two position, SPDT	2.2 A Pilot Duty	Yes	1	6 VA 24 V 60 Hz	6 sec.	VC2711ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
VC4011ZZ11	Two position, SPDT	—	No	0	6 VA 100-130 V 50/60 Hz	6 sec.		40 in.	1 m	—
VC4013ZZ11	Two position, SPDT	—	No	0	6 VA 200-240 V 50/60 Hz	6 sec.		40 in.	1 m	—
VC6834ZZ11	SP3T (tri-state) Floating Control	2.2 A Pilot Duty	Yes	0	6 VA 24 V 50/60 Hz	120 sec.	VC6831ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
VC6931ZZ11	SP3T (tri-state) Floating Control	—	No	0	6 VA 24 V 50/60 Hz	120 sec.		40 in.	1 m	—
VC6934ZZ11	SP3T (tri-state) Floating Control	—	No	0	6 VA 24 V 50/60 Hz	120 sec.	VC6931ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter
VC7931ZZ11	0 (nominal)/2 (actual) to 10 Vdc	—	No	0	6 VA 24 V 50/60 Hz	120 sec.		40 in.	1 m	—
VC7934ZZ11	0 (nominal)/2 (actual) to 10 Vdc	—	No	0	6 VA 24 V 50/60 Hz	120 sec.	VC7931ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
VC8111ZZ11	Two position, SPST	—	No	0	6 VA 24 V 60 Hz	6 sec.		40 in.	1 m	—
VC8114ZZ11	Two position, SPST	—	No	0	6 VA 24 V 60 Hz	6 sec.	VC8111ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables

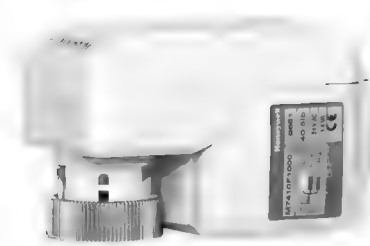
* TRADELINE models • SUPER TRADELINE models

Valve Actuators

Product Number	Control Signal	Auxiliary Switch Ratings	External Auxiliary Switches Available	Internal Auxiliary Switch	Power Consumption Driving	Run Time	Replaces	Cable Lengths		Includes
								(inch)	(mm)	
VC8711ZZ11	Two position, SPST	2.2 A Pilot Duty	Yes	1	6 VA 24 V 60 Hz	6 sec.		40 in.	1 m	—
VC8714ZZ11	Two position, SPST	2.2 A Pilot Duty	Yes	1	6 VA 24 V 60 Hz	6 sec.	VC8711ZZ11	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
VC6936ZZ11-530	SP3T (tri-state) Floating Control	—	No	0	6 VA 24 V 50/60 Hz Power Failure Return N.O./N.C.	120 sec.	VC6936ZZ11-524	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
VC7936ZZ11-529	0 (nominal)/2 (actual) to 10 Vdc, or 10-2 Vdc; Floating; PWM; on-off	—	No	0	18 VA 24 V 50/60 Hz Power Failure Return N.O./N.C.	60/120 sec	VC7936ZZ11-523	5 ft. plenum rated	1.5 m plenum rated	3/8" flex conduit adapter with plenum-rated cables
* TRADELINE models • SUPER TRADELINE models										

Valve Actuators, Direct Coupled

M6410; M7410 Non-Spring Return Cartridge Globe Valve Actuator



Small Individual Room Control (IRC) Electric Actuators provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Small size allows installation in limited space of fan coil units, induction units, and small reheaters or recoolers.
- Visual position indication (red pin).

Dimensions, Approximate: 2-3/8 in. high, 1-15/16 in. wide, 3-15/16 in. deep (61 mm high, 49 mm wide, 100 mm deep)

Electrical Connections: Conduit connector

Electrical Protection: Class I Insulation (24 Vac)

Humidity: 5 to 95% RH

Housing Material: Low Maintenance Plastic Housing

Manual Operation: None

Mounting Method: Thread onto valve bonnet

Operating Temperature: 32 F to 122 F (0 C to 50 C)

Medium Temperature: 266 F Maximum (130 C Maximum)

Storage Temperature Range: -40 F to 158 F (-40 C to +70 C)

Switches: No

Frequency: 50 Hz, 60 Hz

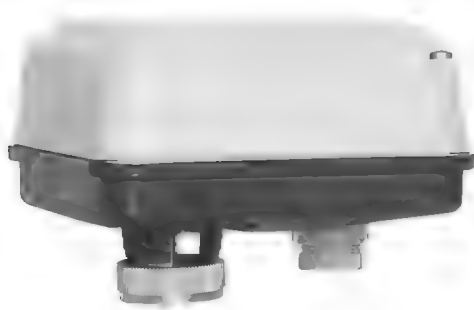
Includes: Conduit Connector

Approvals:

Underwriters Laboratories, Inc: UL94-5V

Product Number	Control Signal	Feed-back Signal	Input Impedance	Rated Force		Fail Safe Mode	Power Consumption: Driving	Nominal Drive Time @ 60 Hz (seconds)	Stroke		Comments
				(lbf)	(N)				(inch)	(mm)	
M6410A1029	Floating, SPDT	No	—	40.5	180	Non-Spring Return	0.7 VA	125	0.25	6.35	—
M6410A3017	Floating, SPDT	No	—	67.5	300	Non-Spring Return	0.7 VA	125	0.25	6.35	—
M7410F1000	0-10 or 2-10 Vdc Modulating	Yes	100K ohm	40.5	180	Non-Spring Return	1.4 VA	125	0.25	6.35	Direct/Reverse Acting Switch
M7410F3006	0-10 or 2-10 Vdc Modulating	Yes	100K ohm	67.5	300	Non-Spring Return	1.4 VA	125	0.25	6.35	Direct/Reverse Acting Switch
* TRADELINE models • SUPER TRADELINE models											

M6435; M7435 Spring Return Cartridge Globe Valve Actuator



Small Individual Room Control (IRC) Electric Actuators provide floating or modulating control of V5852, V5862 two-way or V5853, V5863 three-way valves.

- Suitable for Excel/IRC system or other controllers providing specified signals.
- Magnetic coupling for torque limitation independent of voltage supply and self-adjustment of the close-off port.
- No mounting tools required.
- Small size allows installation in limited space of fan coil units, induction units, and small reheaters or recoolers.
- Visual position indication (red pin).

Dimensions, Approximate: 3-3/16 in. high, 4-1/4 in. wide, 5 in. deep
(81 mm high, 108 mm wide, 126 mm deep)

Electrical Connections: Conduit connector

Electrical Protection: Class I Insulation (24 Vac)

Humidity: 5 to 95% RH

Housing Material: Low Maintenance Plastic Housing

Manual Operation: None

Mounting Method: Thread onto valve bonnet

Operating Temperature: 32 F to 122 F (0 C to 50 C)

Medium Temperature: 266 F Maximum (130 C Maximum)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Switches: No

Frequency: 50 Hz, 60 Hz

Includes: Conduit Connector

Approvals:

Underwriters Laboratories, Inc: UL94-5V

Product Number	Control Signal	Feed-back Signal	Input Impedance	Rated Force		Fail Safe Mode	Power Consumption: Driving	Nominal Drive Time @ 60 Hz (seconds)	Nominal Spring Return Time (seconds)	Stroke		Comments
				(lbf)	(N)					(inch)	(mm)	
M6435A1004	Floating, SPDT	No	—	40.5	180	Spring Return	10 VA	50	10	0.25	6.35	—
M7435F1001	0-10 or 2-10 Vdc Modulating	Yes	100K ohm	40.5	180	Spring Return	5 VA	50	10	0.25	6.35	Direct/Reverse Acting Switch

* TRADELINE models • SUPER TRADELINE models

Valve Actuators, Direct Coupled

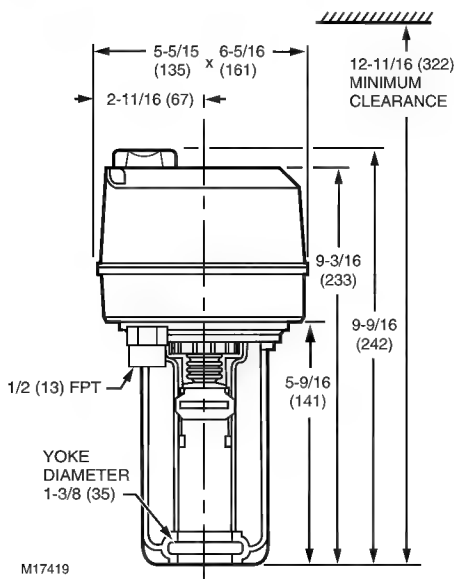
ML6420; ML7420 Non-Spring Return Direct Coupled Globe Valve Actuators



Mount directly on V5011 and V5013 steam and water globe valves without a linkage.

- Easy and quick installation.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Manual operator.
- Synchronous motor.
- Maintenance free.
- ML7420 has an internal selector plug that can be used to reverse the direction of action.

Dimension Diagrams



Electrical Connections: Screw terminals

Electrical Protection: Class I Insulation (24 Vac)

Protection: IP54

Humidity: 5 to 95% RH

Housing Material: ABS-FR Plastic

Manual Operation: None

Mounting Method: Directly on V5011/V5013 Globe Valves (3/4" or 20mm stroke)

Operating Temperature: 14 F to 122 F (-10 C to +50 C)

Medium Temperature: 300 F Maximum (150 C Maximum)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Switches: Yes

Frequency: 60 Hz

Includes: Conduit Connector

Approvals:

Underwriters Laboratories, Inc: UL94-5V

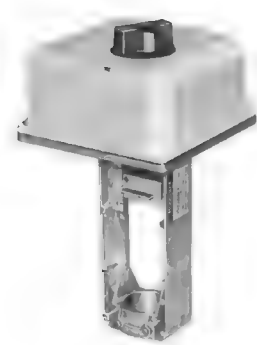
Canadian Standards Association: Listed

CE Standard: Listed

Product Number	Control Signal	Feed-back Signal	Input Impedance	Rated Force		Fail Safe Mode	Power Consumption: Driving	Nominal Drive Time @ 60 Hz (seconds)	Stroke	
				(lbf)	(N)				(inch)	(mm)
ML6420A3049	Floating, On/Off, SPDT	—	—	135	600	Non-Spring Return	6 VA	60	0.75	20
ML6420A3056	Floating, On/Off, SPDT	—	—	135	600	Non-Spring Return	6 VA	30	0.75	20
ML7420A3055	Modulating	Yes	1K ohm	135	600	Non-Spring Return	7 VA	60	0.75	20
ML7420A3063	Modulating	Yes	1K ohm	135	600	Non-Spring Return	7 VA	30	0.75	20

* TRADELINE models • SUPER TRADELINE models

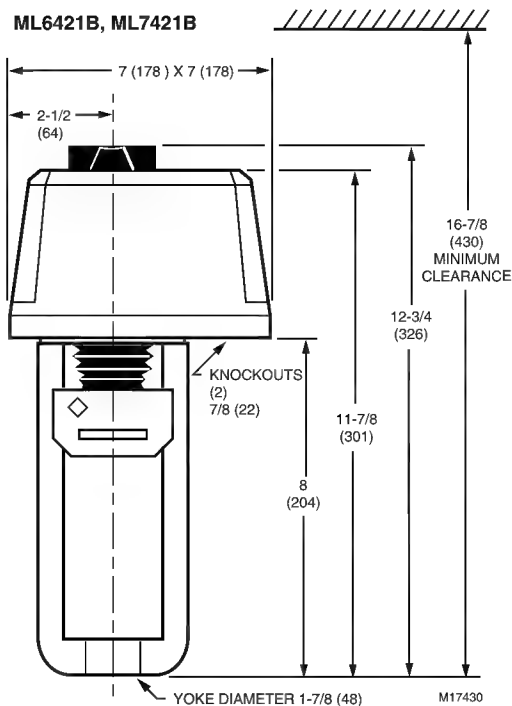
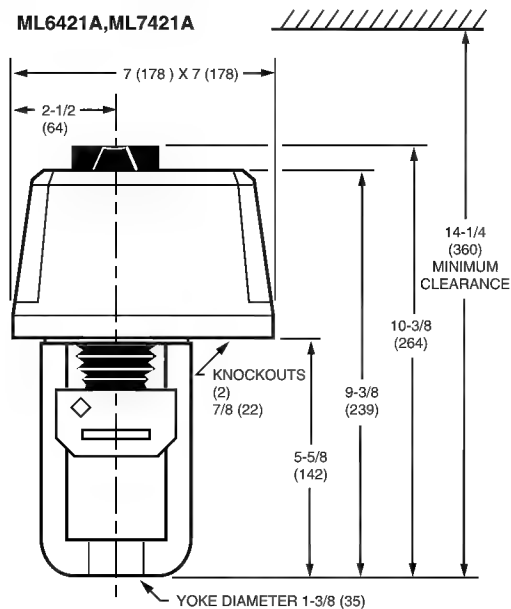
ML6421; ML7421 Non-Spring Return Direct Coupled Globe Valve Actuators



Mount directly on V5011 and V5013 steam and water globe valves without a linkage. ML6421; ML7421 Non-Spring Return Actuators will operate 1/2 to 6 in. valves.

- Easy and quick installation.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Manual operator.
- Synchronous motor.
- Maintenance free.

Dimension Diagrams



Electrical Connections: Screw terminals

Electrical Protection: Class I Insulation (24 Vac)

Protection: IP54

Humidity: 5 to 95% RH

Housing Material: ABS Plastic

Manual Operation: None

Mounting Method: Directly on V5011/V5013 Globe Valves (3/4" or 20mm stroke)

Operating Temperature: 14 F to 122 F (-10 C to +50 C)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Switches: Yes

Frequency: 60 Hz

Includes: Conduit Connector

Approvals:

Underwriters Laboratories, Inc: UL94-5V

Canadian Standards Association: Listed

CE Standard: Listed

Product Number	Control Signal	Feedback Signal	Rated Force		Fail Safe Mode	Power Consumption: Driving	Nominal Drive Time @ 60 Hz (seconds)	Stroke	
			(lbf)	(N)				(inch)	(mm)
ML6421A1017	Floating, On/Off, SPDT	—	405	1800	Non-Spring Return	11 VA	95	0.75	20
ML6421B1040	Floating, On/Off, SPDT	—	405	1800	Non-Spring Return	11 VA	175	1.5	38
ML7421A1032	Modulating	Yes	405	1800	Non-Spring Return	12 VA	95	0.75	20
ML7421B1023	Modulating	Yes	405	1800	Non-Spring Return	12 VA	175	1.5	38

* TRADELINE models • SUPER TRADELINE models

Valve Actuators, Direct Coupled

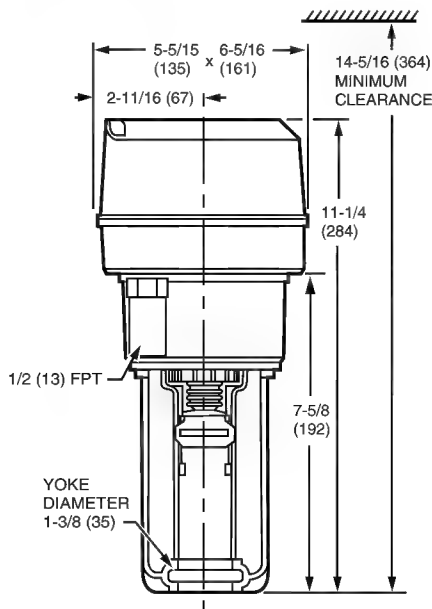
ML6425; ML7425 Spring Return Direct Coupled Globe Valve Actuators



Mount directly on V5011 and V5013 steam and water globe valves without a linkage. ML6425; ML7425 Spring Return Actuators will operate 1/2 to 3 in. valves.

- Easy and quick installation.
- No separate linkage required.
- Conduit connector standard.
- No adjustments required on linkage.
- Accurate valve positioning.
- Low power consumption.
- High close-off ratings.
- Force limiting end switches.
- Manual operator.
- Synchronous motor.
- Maintenance free.

Dimension Diagrams



M7892A

Electrical Connections: Screw terminals

Electrical Protection: Class I Insulation (24 Vac)

Protection: IP54

Humidity: 5 to 95% RH

Housing Material: ABS-FR Plastic

Manual Operation: Manual Override Winding

Mounting Method: Directly on V5011/V5013 Globe Valves (3/4" or 20mm stroke)

Operating Temperature: 14 F to 122 F (-10 C to +50 C)

Medium Temperature: 300 F Maximum (150 C Maximum)

Storage Temperature Range: -40 F to +158 F (-40 C to +70 C)

Switches: Yes

Frequency: 60 Hz

Includes: Conduit Connector

Approvals:

Underwriters Laboratories, Inc: UL94-5V

CE Standard: Listed

Product Number	Control Signal	Feed-back Signal	Rated Force		Fail Safe Mode	Power Consumption: Driving	Nominal Drive Time @ 60 Hz (seconds)	Nominal Spring Return Time (seconds)	Stroke	
			(lbf)	(N)					(inch)	(mm)
ML6425A3022	Floating, On/Off, SPDT	—	135	600	Stem down on power failure	11 VA	90	12	0.75	20
ML6425B3013	Floating, On/Off, SPDT	—	135	600	Stem up on power failure	11 VA	90	12	0.75	20
ML7425A3013	Modulating	Yes	135	600	Stem down on power failure	12 VA	90	12	0.75	20
ML7425B3012	Modulating	Yes	135	600	Stem up on power failure	12 VA	90	12	0.75	20
* TRADELINE models • SUPER TRADELINE models										

ML6984; ML7984 Direct Coupled Linear Valve Actuators



The ML6984 and ML7984 are self-contained, self-adjusting, linear motorized linkage that mounts directly onto V5011/13 A,B,C,F,G,N Two- or Three-way valves, V5045 1/2 to 3-inch water and steam valve bodies, and provides up to 19 mm (3/4") of linear travel (stem lift). The ML6984 is for use with low voltage 3-wire SPDT Series 20 (on-off), Series 60 (floating) electro-mechanical (dry contacts) or electronic (triac) output controllers. The ML7984 is for use with modulating control signals.

- Allows the use of one common transformer power supply for multiple actuators and controllers.
- Self-contained, motorized valve linkage.
- Linkage self-adjusts to valve stroke of up to 19mm (3/4").
- Multipose mounting.
- Strong valve seat closing force 710 Newton (160 lbs.).
- Compact size for easy installation in confined area.
- One device for either Vac or Vdc power supply application.
- Electronic current sensing provides internal protection and positive full closing force.
- Field-addable auxiliary switches available.
- Compatible with 3-wire or 5-wire control systems.

Dimensions, Approximate: 6-13/16 in. high, 4 in. wide, 3-3/16 in. deep (173 mm high, 102 mm wide, 82 mm deep)

Electrical Connections: Screw terminals

Fail Safe Mode: Non-Spring Return

Humidity: 15 to 95% RH at 104 F(40 C)

Manual Operation: None

Mounting Method: Directly on V5011/V5013 Globe Valves (3/4" or 20mm stroke)

Power Consumption, Stall: 12 VA

Power Consumption, Driving: 6 VA

Operating Temperature: 32 F to 130 F (0 C to +55 C)

Shipping Temperature Range: -40 F to +150 F (-40 C to + 65 C)

Switches: Yes, Line Voltage Rated

Frequency: 50 Hz, 60 Hz

Product Number	Control Signal	Input Impedance	Rated Force		Fail Safe Mode	Nominal Drive Time @ 60 Hz (seconds)	Stroke		Used With
			(lbf)	(N)			(inch)	(mm)	
ML6984A1006	Floating, On/Off	—	160	710	Non-Spring Return	63	0.75	20	V5011, V5013, V5045
ML7984A3001	2-10 Vdc, 4-20 mA, 135 ohm	Voltage - 20 Kohm, Current - 237ohm	160	710	Non-Spring Return	63	0.75	20	V5011A, V5011B, V5011N, V5013B, V5013C, V5013N
ML7984A3019	2-10 Vdc, 4-20 mA, 135 ohm	Voltage - 20 Kohm, Current - 237ohm	160	710	Non-Spring Return	63	0.75	20	V5011F, V5011G
ML7984B3000	2-10 Vdc, Pulse Width Modulation	20K ohm	160	710	Non-Spring Return	63	0.75	20	V5011, V5013, V5045

* TRADELINE models • SUPER TRADELINE models

Globe Valves

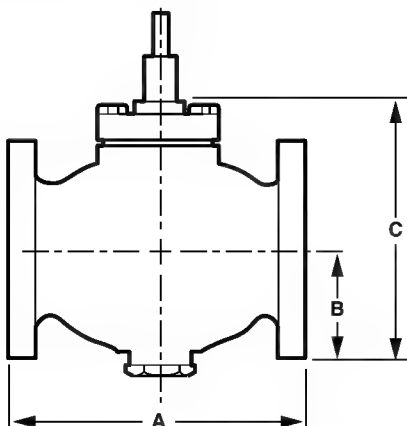
V3350; V3351; V3450; V3451 Two-Way Flanged Valves



Two-way, cast-iron, flanged valve used in heating or cooling systems for two-position or modulating control of steam, water, or glycol solutions to 50 percent.

- Not suitable for combustible gases.
- Available in ANSI Class 125 (V3350A-D; V3351A,C) and 250 (V3450A-D; V3451A,C).
- Ranges from 2-1/2 to 6 inches in size.
- Valve flange face-to-face dimensions meet ISA 75.03.
- Direct coupled universal bonnet.
- ANSI Leakage Class IV (0.01% of Cv).
- Choice of Bronze or Stainless Steel trim; EPDM O-ring or Teflon cartridge type packing.
- Uses a Q5001 Linkage and a control motor, an ML6421, ML6425, ML7421, ML7425 Direct-Coupled Actuator or only an 8 in. or 13 in. Direct Acting MP953 Pneumatic Actuator to position valve.
- Available in direct or reverse acting for normally open or normally closed applications.
- Available with equal percentage flow characteristic for close control of water or with linear flow characteristic for close control of steam.
- Stainless Steel stem to prevent corrosion.
- V3350 B,D and V3450 B,D control high pressure steam (100psi). All other 2-way models can be used to control water, glycol solutions to 50 percent, or low pressure steam (<15psi).

Dimension Diagrams



VALVE ACTION	NOMINAL VALVE SIZE IN. (MM)	ANSI CLASS 125				ANSI CLASS 250			
		DIMENSIONS IN IN. (MM)			WEIGHT LB (KG)	DIMENSIONS IN IN. (MM)			WEIGHT LB (KG)
		A	B	C		A	B	C	
NORMALLY CLOSED	2-1/2 (65)	10-7/8 (276)	4-7/8 (125)	10-5/8 (269)	60 (27)	11-1/2 (292)	5-3/8 (135)	11 (279)	75 (34)
	3 (80)	11-3/4 (299)	5-5/8 (142)	11-15/16 (303)	76 (35)	12-1/2 (318)	6 (154)	12-7/16 (315)	99 (45)
	4 (100)	13-7/8 (352)	6-5/8 (168)	13-15/16 (354)	119 (54)	14-1/2 (358)	7 (178)	14-3/8 (364)	158 (72)
	5 (125)	15-3/4 (400)	7-1/2 (185)	15-1/4 (388)	146 (66)	15-5/8 (422)	7-3/4 (196)	15-3/4 (399)	201 (91)
	6 (150)	17-3/4 (451)	8-3/16 (207)	17-1/16 (433)	196 (89)	18-5/8 (473)	5-5/8 (218)	17-1/12 (444)	284 (129)
NORMALLY OPEN	2-1/2 (65)	10-7/8 (276)	4-7/8 (123)	11 (281)	60 (27)	11-1/2 (292)	4-7/8 (123)	11 (281)	75 (34)
	3 (80)	11-3/4 (299)	5-5/16 (135)	12-1/4 (312)	76 (35)	12-1/2 (318)	5-5/16 (135)	12-1/4 (312)	99 (45)
	4 (100)	13-7/8 (352)	6-5/16 (160)	13-9/16 (345)	119 (54)	14-1/2 (368)	6-5/16 (160)	13-5/8 (345)	158 (72)
	5 (125)	15-3/4 (400)	7 (177)	15-3/16 (385)	146 (66)	16-5/8 (422)	7 (177)	15-3/16 (385)	201 (91)
	6 (150)	17-3/4 (451)	7-7/8 (200)	16-3/4 (426)	196 (89)	18-5/8 (473)	7-7/8 (200)	16-3/4 (426)	284 (129)

NOTE: REFER TO ELECTRIC OR PNEUMATIC CATALOG PAGES FOR HEIGHT AND WIDTH OF SPECIFIC ACTUATORS.

M4909B

Body Pattern: Two-way

Valve Type: Globe

Controlled Medium: Water w/max of 50% Glycol

Ambient Temperature Range: 20 F to 250 F, steam 337 F

(-7 C to +120 C, steam 170 C)

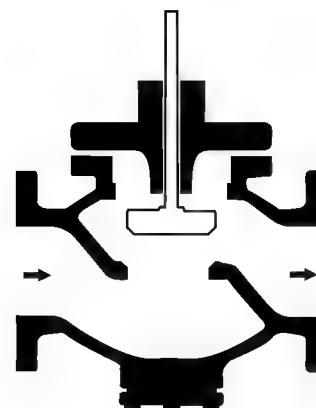
Temperature Range: 20 F to 250 F (-7 to +120 C)

Type of Control: Electric, Pneumatic

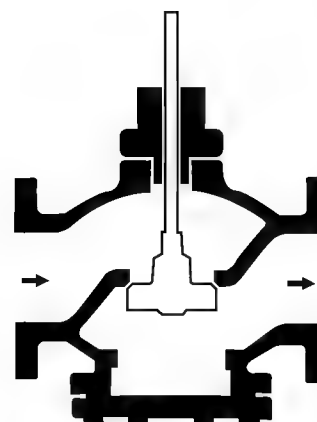
Leakage Rating (%): 0.01% of Cv

Materials:

	Body	Seat	Stem	Packing/ O-Rings	Trim (Plug/ Ball/Disc)
V3350A	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3350B	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	Teflon	Stainless Steel
V3350C	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3350D	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	Teflon	Stainless Steel
V3351C	Cast Iron ASTMA 126 Class B	Bronze	Stainless Steel	EPDM rubber	Bronze
V3450A	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3450B	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	Teflon	Stainless Steel
V3450C	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3450D	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	Teflon	Stainless Steel
V3451A	Cast Iron ASTMA 126 Class B	Bronze	Stainless Steel	EPDM rubber	Bronze



DIRECT ACTING



REVERSE ACTING

M7954

Replacement Parts:

205699A Stem / Bonnet Adapter for 2 1/2 in. and 3 in. flanged valves.

Product Number	ANSI Body Class	Capacity		Flow Char- acteristics	Nominal Pipe Size	Pipe Con- nections	Valve Action	Stem Travel		Maximum Differential Pressure		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V3350A2009	125	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350A2017	125	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350A3007	125	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350A3015	125	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem down to close	3/4 in.	20	50	345	175 Psi	1206 kPa
V3350A4005	125	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350A4013	125	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350A5002	125	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350A5010	125	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350A6000	125	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350A6018	125	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa

* TRADELINE models • SUPER TRADELINE models

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential Pressure		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V3350B2007	125	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350B3005	125	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350B4003	125	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350B5000	125	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350B6008	125	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C2005	125	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350C2013	125	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350C3003	125	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350C3011	125	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350C4001	125	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C4019	125	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C5008	125	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C5016	125	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C6006	125	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350C6014	125	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350D2003	125	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350D3001	125	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3350D4009	125	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350D5006	125	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3350D6004	125	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3351A2008	125	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3351A3006	125	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3351A4004	125	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3351A5001	125	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3351A6009	125	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3351C2004	125	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3351C3002	125	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3351C4000	125	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3351C5007	125	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3351C6005	125	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa

* TRADELINE models • SUPER TRADELINE models

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential Pressure		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V3450A2008	250	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450A2016	250	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450A3006	250	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450A3014	250	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450A4004	250	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450A4012	250	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450A5001	250	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450A5019	250	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450A6009	250	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450A6017	250	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450B2006	250	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450B3004	250	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450B4002	250	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450B5009	250	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450B6007	250	400 Cv	346 Kv	Linear	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C2004	250	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450C2012	250	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450C3002	250	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450C3010	250	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450C4000	250	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C4018	250	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C5007	250	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C5015	250	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C6005	250	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450C6013	250	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450D2002	250	63 Cv	54 Kv	Linear	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450D3000	250	100 Cv	85 Kv	Linear	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3450D4008	250	160 Cv	137 Kv	Linear	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450D5005	250	250 Cv	214 Kv	Linear	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3450D6003	250	400 Cv	340 Kv	Linear	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa

* TRADELINE models • SUPER TRADELINE models

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential Pressure		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V3451A2007	250	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3451A3005	250	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3451A4003	250	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3451A5000	250	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3451A6008	250	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3451C2003	250	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Flanged	Stem up to close	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3451C3001	250	100 Cv	85 Kv	Equal Percentage	3 in.	Flanged	Stem up to close	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3451C4009	250	160 Cv	137 Kv	Equal Percentage	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3451C5006	250	250 Cv	214 Kv	Equal Percentage	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3451C6004	250	400 Cv	340 Kv	Equal Percentage	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
* TRADELINE models • SUPER TRADELINE models													

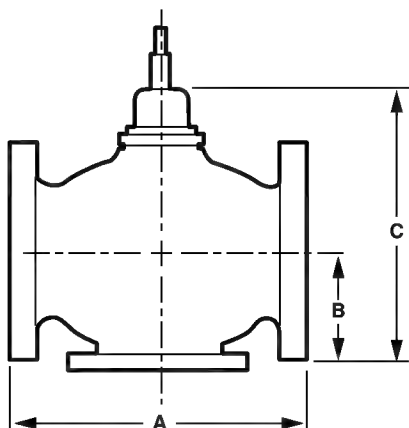
V3360; V3361; V3460; V3461 Three-Way Flanged Valves



Three-way, Cast-Iron, flanged mixing valve used in heating or cooling systems to mix two different temperatures of water supplies or glycol solutions to 50 percent. Can also be used for throttling or bypass coil control applications. A pump is recommended on the coil circuit to improve the heat transfer characteristics of the coil and for freeze protection. Can be used in place of selected models of flanged pattern V5013 Valves for new installations but not for direct replacement of installed valves (face-to-face dimensions and height are different).

- Available in ANSI Class 125 (V3360E; V3361E) and 250 (V3460E; V3461E).
- Ranges from 2-1/2 to 6 inches in size.
- Valve flange face-to-face dimensions meet ISA 75.03.
- Direct coupled universal bonnet.
- ANSI Leakage Class IV (0.01% of Cv).
- EPDM O-ring cartridge type packing.
- Choice of bronze or stainless steel trim.
- Uses a Q5001 Linkage and a control motor, an ML6421, ML6425, ML7421, or ML7425 Direct-Coupled Actuator or only an 8 in. or 13 in. Direct Action MP953 Pneumatic Actuator to position valve (selection based on close-off requirements and valve size).
- Modified Linear or Equal Percentage flow characteristics.
- Stainless Steel stem to prevent corrosion.

Dimension Diagram



VALVE ACTION	NOMINAL VALVE SIZE IN. (MM)	DIMENSIONS IN INCHES (MM)				WEIGHT LB (KG)	
		A		B	C	ANSI CLASS 125	ANSI CLASS 250
		ANSI CLASS 125	ANSI CLASS 250				
3-WAY MIXING	2-1/2 (65)	10-7/8 (276)	11-1/2 (292)	3-3/4 (95)	9-3/8 (239)	60 (27)	75 (34)
	3 (80)	11-3/4 (299)	12-1/2 (318)	4-3/8 (111)	10-3/4 (272)	76 (35)	99 (45)
	4 (100)	13-7/8 (352)	14-1/2 (358)	5-1/8 (132)	12-1/2 (318)	119 (54)	158 (72)
	5 (125)	15-3/4 (400)	15-5/8 (422)	5-3/4 (146)	13-3/4 (349)	146 (66)	201 (91)
	6 (150)	17-3/4 (451)	18-5/8 (473)	6-5/8 (167)	15-1/2 (393)	196 (89)	284 (129)

M7994A

Body Pattern: Three-way

Valve Type: Globe

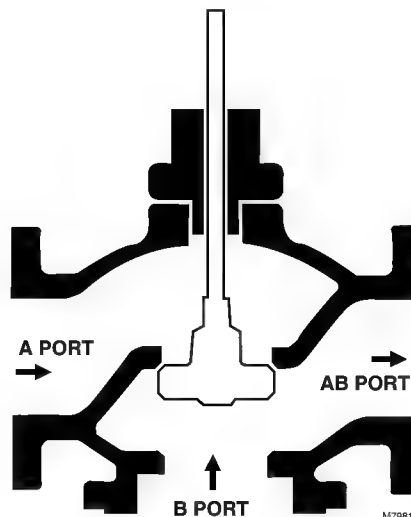
Controlled Medium: Water w/max of 50% Glycol

Ambient Temperature Range: 20 F to 250 F (-7 C to +120 C)

Temperature Range: 20 F to 250 F (-7 to +120 C)

Type of Control: Electric, Pneumatic

Leakage Rating (%): 0.01% of Cv



M7981

Materials:

	Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
V3360E	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3361E	Cast Iron ASTMA 126 Class B	Bronze	Stainless Steel	EPDM rubber	Bronze
V3460E	Cast Iron ASTMA 126 Class B	Stainless Steel	Stainless Steel	EPDM rubber	Stainless Steel
V3461E	Cast Iron ASTMA 126 Class B	Bronze	Stainless Steel	EPDM rubber	Bronze

Replacement Parts:

205699A Stem / Bonnet Adapter for 2 1/2 in. and 3 in. flanged valves.

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential Pressure		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V3360E2008	125	63 Cv	54 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	2 1/2 in.	Flanged	Mixing	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3360E3006	125	100 Cv	85 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	3 in.	Flanged	Mixing	3/4 in.	20 mm	50	345	175 Psi	1206 kPa
V3360E4004	125	160 Cv	137 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	4 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3360E5001	125	250 Cv	214 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	5 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3360E6009	125	400 Cv	340 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	6 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	175 Psi	1206 kPa
V3361E2007	125	63 Cv	54 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	2 1/2 in.	Flanged	Mixing	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3361E3005	125	100 Cv	85 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	3 in.	Flanged	Mixing	3/4 in.	20 mm	25	173	175 Psi	1206 kPa
V3361E4003	125	160 Cv	137 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	4 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3361E5000	125	250 Cv	214 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	5 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3361E6008	125	400 Cv	340 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	6 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	175 Psi	1206 kPa
V3460E2007	250	63 Cv	54 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	2 1/2 in.	Flanged	Mixing	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3460E3005	250	100 Cv	85 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	3 in.	Flanged	Mixing	3/4 in.	20 mm	50	345	400 Psi	2758 kPa
V3460E4003	250	160 Cv	137 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	4 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3460E5000	250	250 Cv	214 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	5 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3460E6008	250	400 Cv	340 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	6 in.	Flanged	Mixing	1 1/2 in.	40 mm	50	345	400 Psi	2758 kPa
V3461E2006	250	63 Cv	85 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	2 1/2 in.	Flanged	Mixing	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3461E3004	250	100 Cv	137 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	3 in.	Flanged	Mixing	3/4 in.	20 mm	25	173	400 Psi	2758 kPa
V3461E4002	250	160 Cv	137 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	4 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3461E5009	250	250 Cv	214 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	5 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa
V3461E6007	250	400 Cv	346 Kv	Equal Percentage (A-AB) Modified Linear (B-AB)	6 in.	Flanged	Mixing	1 1/2 in.	40 mm	25	173	400 Psi	2758 kPa

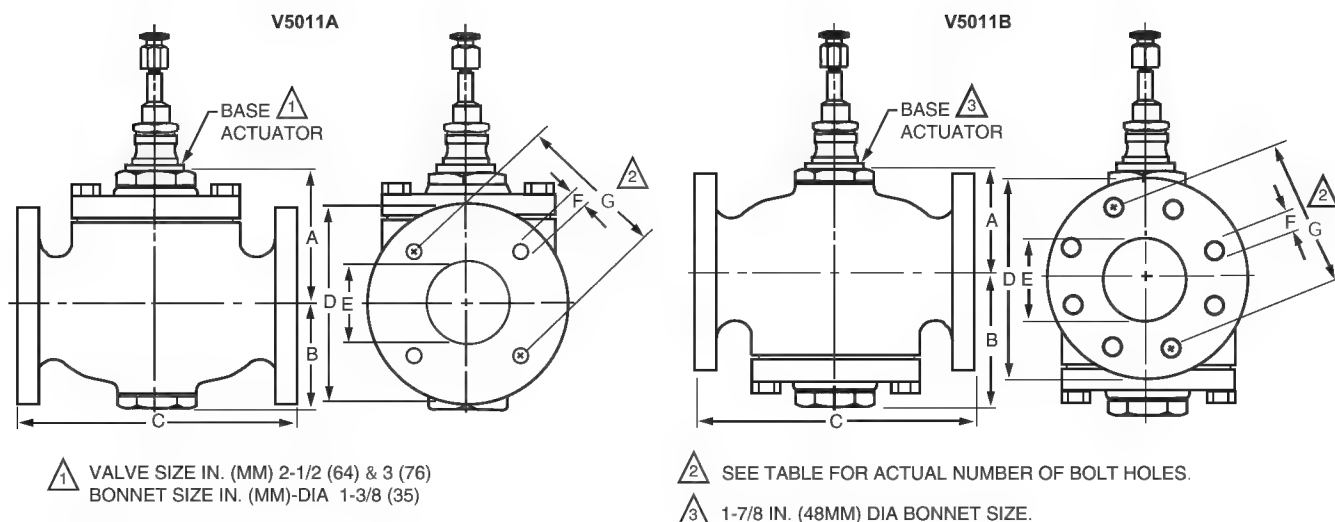
* TRADELINE models • SUPER TRADELINE models

V5011A,B Two-Way Flanged Globe Valves

Used for proportional control of hot or chilled water and glycol solutions (to 50 percent concentration) and for two-position control of low pressure steam.

- Sizes range from 2-1/2 to 6 inches.
- Stainless steel stem with removable Teflon disc.
- Valves utilize direct mounting valve actuators or Q5020 linkages with Direct Coupled Actuators or Pneumatic Valve Actuators to operate the valve.
- Equal Percentage flow characteristic for water; linear flow for steam.

Dimension Diagram



MODEL	VALVE SIZE (IN.)	A	B	C	D	E	F	G	NO. OF BOLT HOLES
V5011A FLANGED DIRECT BODY	2-1/2	4-13/16 (122)	4 (102)	9-1/2 (241)	7 (178)	2-1/2 (64)	3/4 (18)	5-1/2 (140)	4
	3	5-3/8 (137)	4-5/8 (117)	11 (279)	7-1/2 (190)	3 (76)	3/4 (18)	6 (152)	4
	4	7-9/16 (192)	5-3/16 (132)	13 (330)	9 (229)	4 (102)	3/4 (18)	7-1/2 (191)	8
	5	7 (178)	6-1/8 (156)	15 (381)	10 (254)	5 (127)	7/8 (22)	8-1/2 (216)	8
	6	8 (203)	7-1/16 (179)	16-1/2 (419)	11 (279)	6 (152)	7/8 (22)	9-1/2 (241)	8
V5011B FLANGED REVERSE BODY	4	4-11/16 (119)	8-1/16 (205)	13 (330)	9 (229)	4 (102)	3/4 (18)	7-1/2 (191)	8
	5	5-5/8 (191)	7-1/2 (191)	15 (381)	10 (254)	5 (127)	7/8 (22)	8-1/2 (216)	8
	6	6-9/16 (167)	8-1/2 (216)	16-1/2 (419)	11 (279)	6 (152)	7/8 (22)	9-1/2 (241)	8

M19909

Body Pattern: Two-way

Valve Type: Globe

Controlled Medium: Steam, Water, Water w/max of 50% Glycol

Temperature Range: 40 to 250 F (4 to 121 C)

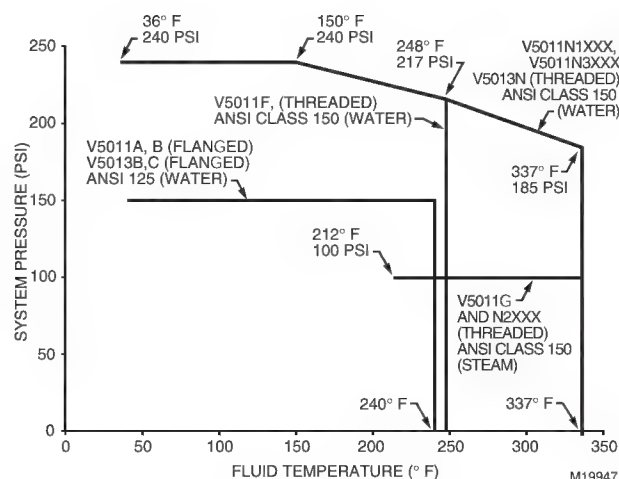
Flow Characteristics: Equal Percentage

Type of Control: Electric, Pneumatic

Materials:

Body	Seat	Stem	Packing/O-Rings
Cast Iron	Bronze	Stainless Steel	Teflon Cone

Maximum Pressure and Temperature Specifications



Globe Valves

Product Number	ANSI Body Class	Capacity		Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential for Quiet Water Service		Maximum Operating Pressure	
		Cv	Kv				(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V5011A1734	125	63 Cv	54 Kv	2 1/2 in.	Flanged	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011A1767	125	100 Cv	85 Kv	3 in.	Flanged	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011A1858	125	160 Cv	137 Kv	4 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011A1882	125	250 Cv	214 Kv	5 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011A1916	125	360 Cv	308 Kv	6 in.	Flanged	Stem down to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011B1013	125	160 Cv	137 Kv	4 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011B1047	125	250 Cv	214 Kv	5 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
V5011B1070	125	360 Cv	308 Kv	6 in.	Flanged	Stem up to close	1 1/2 in.	40 mm	20 psid	138 kPa	217 psi at 250 F water, 15 psi steam, 250 psi at 100 F water	1496 kPa at 121 F water, 100 kPa steam, 1724 kPa at 38 C water
* TRADELINE models • SUPER TRADELINE models												

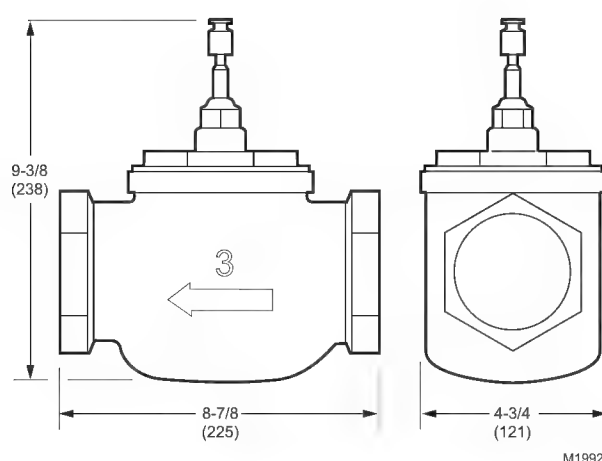
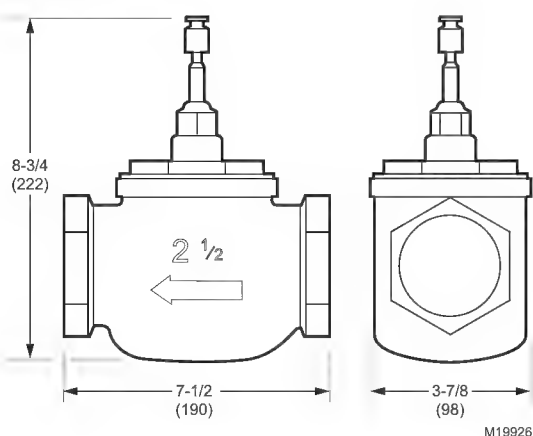
V5011F,G Two-Way Threaded Globe Valves



Used for two-position or modulating control of steam and water and glycol solutions (to 50 percent concentration) in heating or cooling systems.

- Sizes range from 2-1/2 to 3 inches.
- Spring-loaded, self-adjusting packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam.
- Valves utilize direct mounting valve actuators or Q5020 linkages with Direct Coupled Actuators or Pneumatic Valve Actuators to operate the valve.

Dimension Diagrams



Body Pattern: Two-way

Valve Type: Globe

Controlled Medium: Water w/max of 50% Glycol

Temperature Range: 40 to 250 F (4 to 121 C)

Type of Control: Electric, Pneumatic

Actuator Compatibility:

Leakage Rating (%): 0.05% of Cv

Approvals:

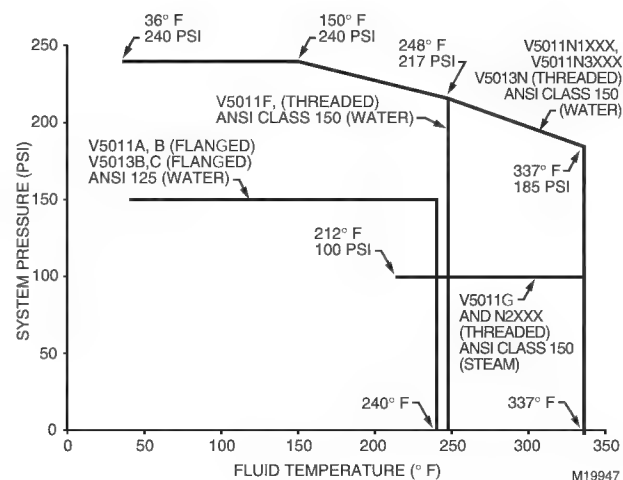
CRN Number: 0C0861.9087YTN

Canadian Standards Association: 0C0861.9C

Materials:

	Body	Seat	Stem	Packing/ O-Rings	Trim (Plug/ Ball/Disc)
V5011F	Red Brass	Brass	Stainless Steel	Teflon and Nitrile	Brass
V5011G	Red Brass	Brass	Stainless Steel	Teflon Cone	Brass

Maximum Pressure and Temperature Specifications



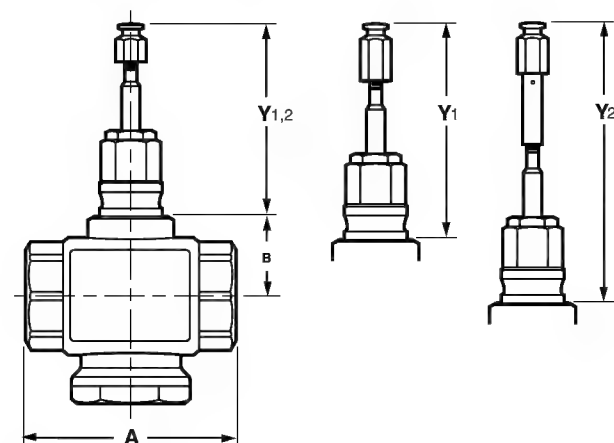
Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential for Quiet Water Service		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V5011F1105	150	63 Cv	54 Kv	Equal Percentage	2 1/2 in.	Female NPT	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi at 150 F water	1655 kPa at 82 C water
V5011F1113	150	100 Cv	85 Kv	Equal Percentage	3 in.	Female NPT	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi at 150 F water	1655 kPa at 82 C water
V5011G1111	150	63 Cv	54 Kv	Linear	2 1/2 in.	Female NPT	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011G1129	150	100 Cv	85 Kv	Linear	3 in.	Female NPT	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
* TRADELINE models • SUPER TRADELINE models													

V5011N Two-way Globe Valves



Dimension Diagrams



VALVE SIZE (IN)	A in. (mm)	B in. (mm)
1/2	3-1/4 (83)	1-9/16 (40)
3/4		
1	4-1/16 (103)	
1-1/4	4-3/16 (106)	
1-1/2	4-3/4 (120)	1-13/16 (47)
2	5-1/4 (134)	

^aY₂ WITH STEM EXTENSION FOR MP953A,C (8 IN. ONLY)

M17378

VALVE	Y1 in. (mm)	Y2 ^a in. (mm)
V5011N1XXX OR V5011N2XXX	3-1/2 (89)	5-1/4 (133)
V5011N3XXX	4-3/16 (107)	5-15/16 (151)

STEM FULLY DOWN
STEM FULLY UP

Body Pattern: Two-way

Valve Type: Globe

Controlled Medium: Water, Water w/max of 50% Glycol

Maximum Differential Pressure: 240 psi (1655 kPa)

Temperature Range: 36 to 248 F water (2 to 120 C water)

Type of Control: Electric, Pneumatic

Pipe Connections: Female NPT

Leakage Rating (%): 0.05% of C_v

Approvals:

CRN Number: 0C0861.9087YTN

Canadian Standards Association: 0C0861.9C

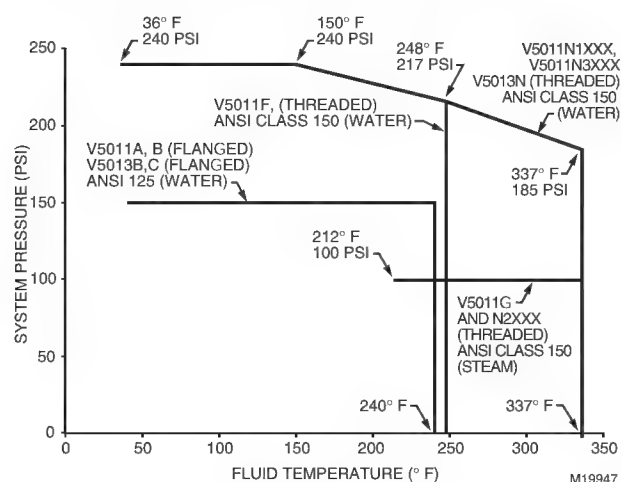
Used for two-position or modulating control of steam, water and glycol solutions (to 50% concentration) in heating or cooling systems.

- Sizes range from 1/2 to 2 inches.
- Direct or reverse-acting models.
- Spring-loaded, self-adjusting Teflon cone packing.
- Stainless steel stem prevents corrosion.
- Valve designs provide equal percentage characteristics of flow for close control of water, and linear characteristic of flow for close control of steam.
- 50:1 rangeability.
- Valves utilize direct mounting valve actuators, Q5020 linkages with Direct Coupled Actuators or Pneumatic Valve Actuators.
- Low seat leakage rating

Materials:

	Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
V5011N 1000 Series	Red Brass	Stainless Steel	Stainless Steel	Teflon	Brass
V5011N 2000 Series	Red Brass	Stainless Steel	Stainless Steel	Teflon	Stainless Steel
V5011N3004	Red Brass	Stainless Steel	Stainless Steel	Teflon	Brass
V5011N3012	Red Brass	Stainless Steel	Stainless Steel	Teflon	Brass
V5011N3020	Red Brass	Integral Brass	Stainless Steel	Teflon	Brass
V5011N3038	Red Brass	Integral Brass	Stainless Steel	Teflon	Brass
V5011N3046	Red Brass	Integral Brass	Stainless Steel	Teflon	Brass

Maximum Pressure and Temperature Specifications



M19947

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Valve Action	Stem Travel		Maximum Differential for Quiet Water Service		Maximum Operating Pressure	
		Cv	Kv				(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V5011N1008	150	0.73 Cv	0.63 Kv	Equal Percentage	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1016	150	1.16 Cv	1 Kv	Equal Percentage	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1024	150	1.85 Cv	1.6 Kv	Equal Percentage	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1032	150	2.9 Cv	2.5 Kv	Equal Percentage	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1040	150	4.7 Cv	4 Kv	Equal Percentage	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1057	150	7.3 Cv	6.3 Kv	Equal Percentage	3/4 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1065	150	11.7 Cv	10 Kv	Equal Percentage	1 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1073	150	18.7 Cv	16 Kv	Equal Percentage	1 1/4 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1081	150	29.3 Cv	25 Kv	Equal Percentage	1 1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N1099	150	46.8 Cv	40 Kv	Equal Percentage	2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N2006	150	0.73 Cv	0.63 Kv	Linear	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2014	150	1.16 Cv	1 Kv	Linear	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2022	150	1.85 Cv	1.6 Kv	Linear	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2030	150	2.9 Cv	2.5 Kv	Linear	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2048	150	4.7 Cv	4 Kv	Linear	1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2055	150	7.3 Cv	6.3 Kv	Linear	3/4 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2063	150	11.7 Cv	10 Kv	Linear	1 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2071	150	18.7 Cv	16 Kv	Linear	1 1/4 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2089	150	29.3 Cv	25 Kv	Linear	1 1/2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N2097	150	46.8 Cv	40 Kv	Linear	2 in.	Stem down to close	3/4 in.	20 mm	20 psid	138 kPa	100 psi steam	690 kPa steam
V5011N3004	150	2.9 Cv	2.5 Kv	Equal Percentage	1/2 in.	Stem up to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N3012	150	4.7 Cv	4 Kv	Equal Percentage	1/2 in.	Stem up to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N3020	150	7.3 Cv	6.3 Kv	Equal Percentage	3/4 in.	Stem up to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N3038	150	11.7 Cv	10 Kv	Equal Percentage	1 in.	Stem up to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5011N3046	150	18.7 Cv	16 Kv	Equal Percentage	1 1/4 in.	Stem up to close	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa

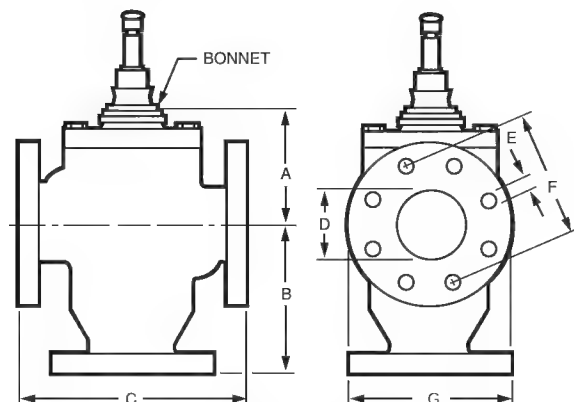
* TRADELINE models • SUPER TRADELINE models

V5013B,C Three-Way Flanged Globe Valves

The V5013B are mixing three-way valves. The V5013C are diverting three-way valves. These valves provide proportional or two-position control of hot or chilled water in heating or cooling systems. These valves are offered in sizes 2 1/2 in. through 6 in.

- Not suitable for combustible gases.
- Valves require a Q5001 Linkage and control motor or MP953 Pneumatic Valve Actuator or ML6984/ML7984 Direct Coupled Actuator to position the valve.
- Constant total flow through full plug travel.
- Stainless steel stem prevents corrosion.
- Class IV (0.01% of Cv) Leakage Rating.

Dimension Diagrams



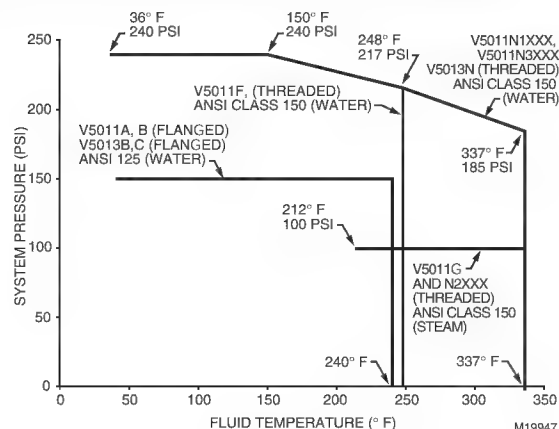
V5013B,C DIMENSIONS

	VALVE SIZE IN INCHES (MM)				
	2-1/2 (64)	3 (76)	4 (102)	5 (125)	6 (152)
A	4-1/2 (114)	5-1/4 (133)	5-7/8 (149)	6-1/4 (159)	7-1/4 (184)
B	6-7/17 (164)	6-5/8 (168)	8-11/16 (221)	9-5/8 (244)	10-11/16 (271)
C	9-1/2 (241)	11 (279)	13 (330)	15 (381)	16-1/2 (419)
D	2-1/2 (64)	3 (76)	4 (102)	5 (127)	6 (152)
E	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)	7/8 (22)
F	5-1/2 (140)	6 (152)	7-1/2 (191)	8-1/2 (216)	9-1/2 (241)
G	7 (178)	7-1/2 (191)	9 (229)	10 (254)	11 (279)

VALVE SIZE	BONNET SIZE	NUMBER OF BOLT HOLES
2-1/2 (64)	1-3/8 (35)	4
3 (76)		
4 (102)	1-7/8 (48)	8
5 (125)		
6 (152)		

C7959B

Maximum Pressure and Temperature Specifications



Body Pattern: Three-way

Valve Type: Globe

Controlled Medium: Water, Water w/max of 50% Glycol

Temperature Range: 40 to 250 F (4 to 121 C)

Type of Control: Electric, Pneumatic

Materials:

Body	Seat	Stem	Packing/O-Rings	Cartridge
Cast Iron	Bronze	Stainless Steel	Teflon Cone	Stainless Steel

Globe Valves

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Differential for Quiet Water Service		Comments
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	
V5013B1003	125	63 Cv	54 Kv	Constant Total	2 1/2 in.	Flanged	Stem up increases B to AB flow	3/4 in.	20 mm	20 psid	138 kPa	Mixing
V5013B1011	125	100 Cv	85 Kv	Constant Total	3 in.	Flanged	Stem up increases B to AB flow	3/4 in.	20 mm	20 psid	138 kPa	Mixing
V5013B1029	125	160 Cv	137 Kv	Constant Total	4 in.	Flanged	Stem up increases B to AB flow	1 1/2 in.	40 mm	20 psid	138 kPa	Mixing
V5013B1037	125	250 Cv	214 Kv	Constant Total	5 in.	Flanged	Stem up increases B to AB flow	1 1/2 in.	40 mm	20 psid	138 kPa	Mixing
V5013B1045	125	360 Cv	308 Kv	Constant Total	6 in.	Flanged	Stem up increases B to AB flow	1 1/2 in.	40 mm	20 psid	138 kPa	Mixing
V5013C1001	125	63 Cv	54 Kv	Constant Total	2 1/2 in.	Flanged	Stem up increases AB to A flow	3/4 in.	20 mm	20 psid	138 kPa	Diverting
V5013C1019	125	100 Cv	85 Kv	Constant Total	3 in.	Flanged	Stem up increases AB to A flow	3/4 in.	20 mm	20 psid	138 kPa	Diverting
V5013C1027	125	160 Cv	137 Kv	Constant Total	4 in.	Flanged	Stem up increases AB to A flow	1 1/2 in.	40 mm	20 psid	138 kPa	Diverting
V5013C1035	125	250 Cv	214 Kv	Constant Total	5 in.	Flanged	Stem up increases AB to A flow	1 1/2 in.	40 mm	20 psid	138 kPa	Diverting
V5013C1043	125	360 Cv	308 Kv	Constant Total	6 in.	Flanged	Stem up increases AB to A flow	1 1/2 in.	40 mm	20 psid	138 kPa	Diverting

* TRADELINE models • SUPER TRADELINE models

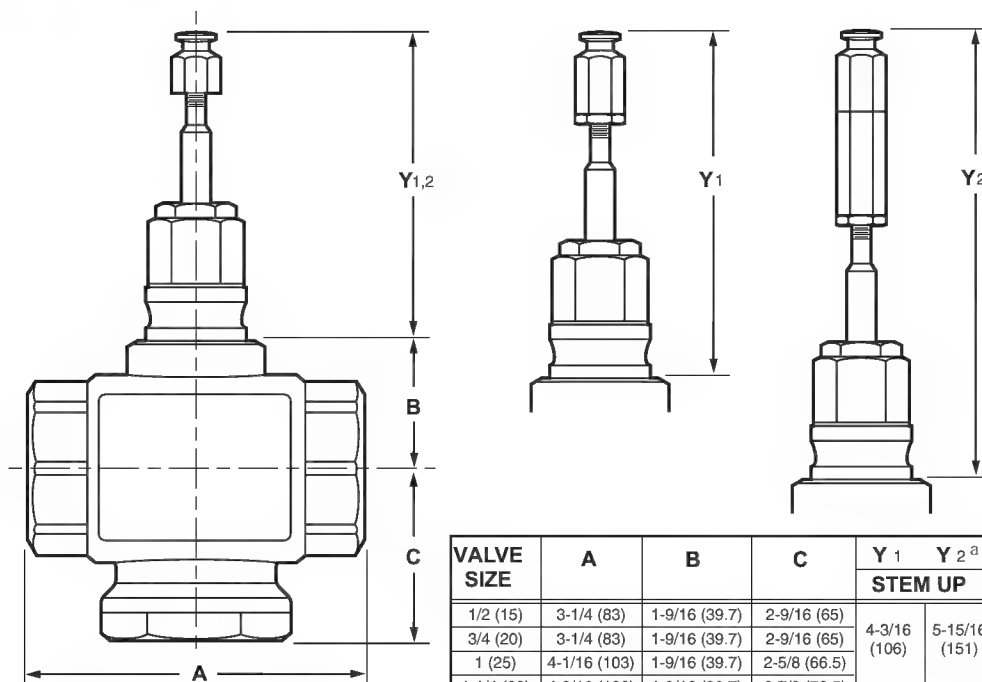
V5013N Three-Way Threaded Globe Valves



The V5013N is a three-way threaded globe valve that controls hot water, cold water, and glycol solutions (up to 50 percent concentration) in heating or cooling HVAC applications. The valves are used for mixing service to direct flow from one or two inlets to a common outlet in two-position or modulating control systems.

- Red brass body with NPT-threaded connections.
- Stainless steel stem and brass plug.
- Low seat leakage rating.
- Spring-loaded, self adjusting packing.
- 50:1 rangeability per VDI/VDE 2173.
- Constant total flow throughout full stem travel.
- Accurate positioning to ensure state-of-the-art temperature control.
- Sizes range from 1/2 inch to 2 inches.
- Suitable for pneumatic or electric/electronic actuation.
- Repack and rebuild kits available for field servicing.

Dimension Diagrams



NOTE: Y DIMENSION IS WITH STEM FULLY UP, NOT DOWN.

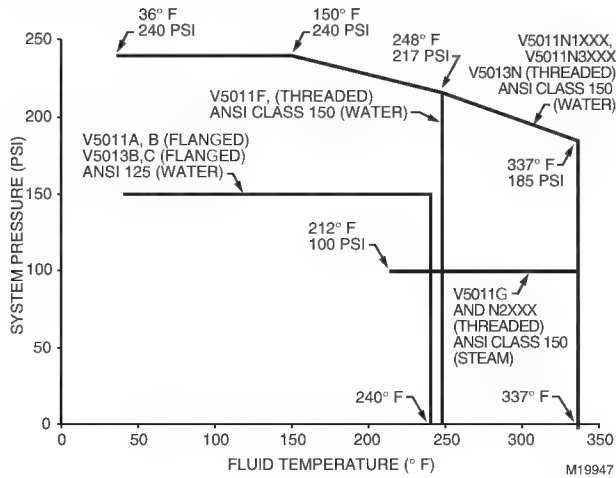
VALVE SIZE	A	B	C	STEM UP	
				Y 1	Y 2 ^a
1/2 (15)	3-1/4 (83)	1-9/16 (39.7)	2-9/16 (65)	4-3/16 (106)	5-15/16 (151)
3/4 (20)	3-1/4 (83)	1-9/16 (39.7)	2-9/16 (65)		
1 (25)	4-1/16 (103)	1-9/16 (39.7)	2-5/8 (66.5)		
1-1/4 (32)	4-3/16 (106)	1-9/16 (39.7)	2-7/8 (72.5)		
1-1/2 (40)	4-3/4 (120)	1-13/16 (46.5)	3 (77)		
2 (50)	5-1/4 (134)	1-13/16 (46.5)	3-5/16 (83.5)		

^a Y2 WITH STEM EXTENSION FOR MP953C,E (8 IN. ONLY)

M12901A

Globe Valves

Maximum Pressure and Temperature Specifications



Body Pattern: Three-way

Valve Type: Globe

Pipe Connections: Female NPT

Flow Characteristics: Equal Percentage (A-AB), Linear (B-AB)

Maximum Differential Pressure: 230 psi (1585 kPa)

Controlled Medium: Water, Water w/max of 50% Glycol

Temperature Range: 36 to 337 F water (2 to 169 C water)

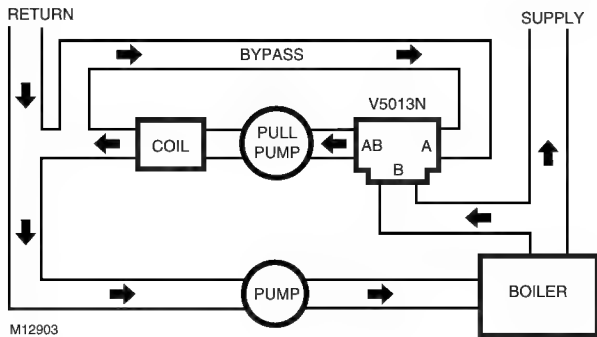
Type of Control: Electric, Pneumatic

Leakage Rating (%): 0.05% of Cv

Approvals:

CRN Number: 0C0861.9087YTN

Canadian Standards Association: 0C0861.9C



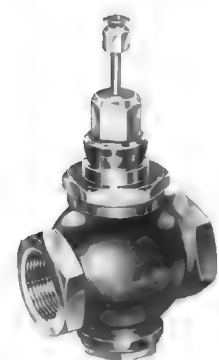
Materials:

	Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
V5013N1030	Red Brass	Stainless Steel and Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1048	Red Brass	Stainless Steel and Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1055	Red Brass	Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1063	Red Brass	Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1071	Red Brass	Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1089	Red Brass	Integral Brass	Stainless Steel	Teflon/EPDM	Brass
V5013N1097	Red Brass	Integral Brass	Stainless Steel	Teflon/EPDM	Brass

Product Number	ANSI Body Class	Capacity		Nominal Pipe Size	Valve Action	Stem Travel		Maximum Differential for Quiet Water Service		Maximum Operating Pressure	
		Cv	Kv			(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)
V5013N1030	150	2.9 Cv	2.5 Kv	1/2 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1048	150	4.7 Cv	4 Kv	1/2 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1055	150	7.3 Cv	6.3 Kv	3/4 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1063	150	11.7 Cv	10 Kv	1 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1071	150	18.7 Cv	16 Kv	1 1/4 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1089	150	29.3 Cv	25 Kv	1 1/2 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa
V5013N1097	150	46.8 Cv	40 Kv	2 in.	Mixing	3/4 in.	20 mm	20 psid	138 kPa	240 psi	1655 kPa

* TRADELINE models • SUPER TRADELINE models

V5047A Double-Seated Globe Valves



Dimensions, Approximate: 4 3/4 in. high, 2 3/8 in. wide, 4 3/8 in. deep
(120 mm high, 60. mm wide, 111 mm deep)

Body Pattern: Two-way

Valve Type: Globe

Controlled Medium: Steam, Water, Water w/max of 50% Glycol

Temperature Range: 32 F to 337 F (0 to 170 C)

Type of Control: Electric

Control high pressure steam, liquids, air or noncombustible gases where positive final shutoff is not required.

- Q5001D Valve Linkage and Modutrol motor required for operation.
- Suitable for two-position, floating, or proportioning control, depending on the motor and controller used.
- Provide high capacity with minimum pressure drop.
- Pipe sizes include 1, 1-1/4, 1-1/2, and 2 inches.
- Straight-through construction and threaded end connections.
- Cast iron body with stainless steel trim.
- Nominal body rating is 125 psig ANSI.
- Plug provides equal percentage characteristic of flow.
- V-port for either throttling or on-off service.
- Replaceable seat rings screw into body.
- Spring-loaded Teflon cone packing for minimum friction.

Leakage Rating (%): 0.005

Materials:

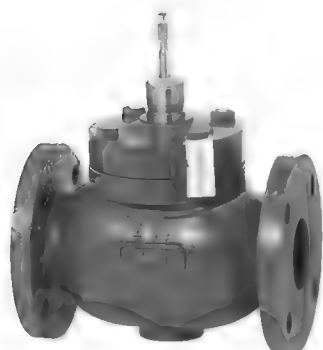
Body	Seat	Stem	Packing/O-Rings	Cartridge
Cast Iron	Stainless Steel	Stainless Steel	Spring loaded non-adjustable Teflon V-ring	Stainless Steel

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Operating Pressure	
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)
V5047A1005	125	13 Cv	10.8 Kv	Equal Percentage	1 in.	Female NPT	Stem down to close	9/16 in.	14 mm	150 psi	1034 kPa
V5047A1013	125	21 Cv	18 Kv	Equal Percentage	1 1/4 in.	Female NPT	Stem down to close	9/16 in.	14 mm	150 psi	1034 kPa
V5047A1021	125	30 Cv	25.7 Kv	Equal Percentage	1 1/2 in.	Female NPT	Stem down to close	9/16 in.	14 mm	150 psi	1034 kPa
V5047A1039	125	50 Cv	43 Kv	Equal Percentage	2 in.	Female NPT	Stem down to close	9/16 in.	14 mm	150 psi	1034 kPa

* TRADELINE models • SUPER TRADELINE models

Globe Valves

V5051A Single-Seated Valves



Control steam, air, liquids, or non-combustible gases in two-position, proportional, or floating control systems where tight shutoff is not required.

- Pressure balanced cage type construction.
- Sizes range from 2-1/2 to 6 in. (63.5 to 152.4 mm).
- Spring-loaded Teflon V-ring packing.
- Requires Q5020C valve linkage and DCA for operation.

Dimensions, Approximate: 8 1/8 in. high, 7 in. wide, 9 1/2 in. deep (206 mm high, 177 mm wide, 241 mm deep)

Body Pattern: Two-way

Valve Type: Cage

Pipe Connections: Flanged

Flow Characteristic: Modified Linear

Controlled Medium: Steam, Water, Water w/max of 50% Glycol

Ambient Temperature Range: 35 to 300 F (2 to 150 C)

Maximum Differential Pressure: 150 psi (1034 kPa)

Temperature Range: 35 F to 300 F (2 to 150 C)

Type of Control: Electric

Leakage Rating (%): 0.01% of Cv, 0.03% of Cv for 5 and 6 inch valves

Materials:

	Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
V5051A 1000 Series	Cast Iron	Bronze	Stainless Steel	Teflon	Bronze
V5051A 3000 Series	Cast Iron	Bronze	Stainless Steel	Teflon	Stainless Steel

Product Number	ANSI Body Class	Capacity		Nominal Pipe Size	Valve Action	Stem Travel		Maximum Close-Off Pressure		Maximum Operating Pressure		Comments
		Cv	Kv			(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)	
V5051A1008	125	75 Cv	64.5 Kv	2 1/2 in.	Stem down to close	1 1/2 in.	40 mm	50 psi	345 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A1016	125	116 Cv	88 Kv	3 in.	Stem down to close	1 1/2 in.	40 mm	50 psi	345 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A1024	125	178 Cv	125 Kv	4 in.	Stem down to close	1 1/2 in.	40 mm	50 psi	345 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A1032	125	318 Cv	224 Kv	5 in.	Stem down to close	1 1/2 in.	40 mm	50 psi	345 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A1040	125	390 Cv	224 Kv	6 in.	Stem down to close	1 1/2 in.	40 mm	50 psi	345 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A3004	125	75 Cv	64.5 Kv	2 1/2 in.	Stem down to close	1 1/2 in.	40 mm	150 psi	1034 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A3012	125	116 Cv	88 Kv	3 in.	Stem down to close	1 1/2 in.	40 mm	150 psi	1034 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A3020	125	178 Cv	125 Kv	4 in.	Stem down to close	1 1/2 in.	40 mm	150 psi	1034 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A3038	125	318 Cv	224 Kv	5 in.	Stem down to close	1 1/2 in.	40 mm	150 psi	1034 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.
V5051A3046	125	390 Cv	224 Kv	6 in.	Stem down to close	1 1/2 in.	40 mm	150 psi	1034 kPa	55 psi steam, 140 psi water	379 kPa steam, 965 kPa water	Q5001D1000 requires 1/2 in. 220867A Cam.

* TRADELINE models • SUPER TRADELINE models

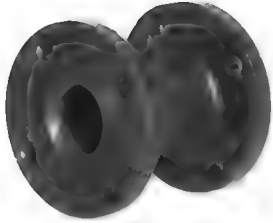
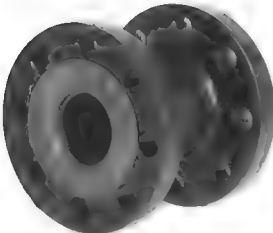
Flanged Globe Valve Rebuild Kit

OS Number	Description	Used With
208572	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350A2017 or V3450A2016
208573	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350A3015 or V3450A3006
208574	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350A4013 or V3450A4012
208575	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350A5010 or V3450A5019
208576	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350A6018 or V3450A6017
208577	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350B2007 or V3450B2006
208578	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350B3005 or V3450B3004
208579	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350B4003 or V3450B4002
208580	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350B5000 or V3450B5009
208581	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350B6008 or V3450B6007
208582	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350C2013 or V3450C2012
208583	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350C3011 or V3450C3010
208584	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350C4019 or V3450C4018
208585	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350C5016 or V3450C5015
208586	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350C6014 or V3450C6013
208587	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350D2003 or V3450D2002
208588	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350D3001 or V3450D3000
208589	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350D4009 or V3450D4008
208590	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350D5006 or V3450D5005
208591	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350D6004 or V3450D6003
208592	Rebuild kit for 2 1/2 inch Flanged V3360/V3460 valves	V3360E2008 or V3460E2007
208593	Rebuild kit for 3 inch Flanged V3360/V3460 valves	V3360E3006 or V3460E3005
208594	Rebuild kit for 4 inch Flanged V3360/V3460 valves	V3360E4004 or V3460E4003
208595	Rebuild kit for 5 inch Flanged V3360/V3460 valves	V3360E5001 or V3460E5000
208596	Rebuild kit for 6 inch Flanged V3360/V3460 valves	V3360E6009 or V3460E6008
208597	Rebuild kit for 2 1/2 inch Flanged V3360/V3460 valves	V3361E2007 or V3461E2006
208598	Rebuild kit for 3 inch Flanged V3360/V3460 valves	V3361E3005 or V3461E3004
208599	Rebuild kit for 4 inch Flanged V3360/V3460 valves	V3361E4003 or V3461E4002
208600	Rebuild kit for 5 inch Flanged V3360/V3460 valves	V3361E5000 or V3461E5009
208601	Rebuild kit for 6 inch Flanged V3360/V3460 valves	V3361E6008 or V3461E6007
208602	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350A2009 or V3450A2008
208603	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350A3007 or V3450A3014
208604	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350A4005 or V3450A4004
208605	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350A5002 or V3450A5001
208606	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350A6000 or V3450A6009
208607	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3351A2008 or V3451A2007
208608	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3351A3006 or V3451A3005
208609	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3351A4004 or V3451A4003
208610	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3351A5001 or V3451A5000
208611	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3351A6009 or V3451A6008
208612	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3350C2005 or V3450C2004
208613	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3350C3003 or V3450C3002
208614	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3350C4001 or V3450C4000
208615	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3350C5008 or V3450C5007
208616	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3350C6006 or V3450C6005
208617	Rebuild kit for 2 1/2 inch Flanged V3350/V3450 valves	V3351C2004 or V3451C2003
208618	Rebuild kit for 3 inch Flanged V3350/V3450 valves	V3351C3002 or V3451C3001
208619	Rebuild kit for 4 inch Flanged V3350/V3450 valves	V3351C4000 or V3451C4009

Globe Valves

OS Number	Description	Used With
208620	Rebuild kit for 5 inch Flanged V3350/V3450 valves	V3351C5007 or V3451C5006
208626	Rebuild kit for 6 inch Flanged V3350/V3450 valves	V3351C6005 or V3451C6004
208638	Replacement water packing for V33xx and V34xx valves	
208639	Replacement steam packing for V33xx and V34xx valves	

V33 Series Valve Accessories

OS Number	Description	Used With	
208629	Service Flange for 3", 3-way, ANSI 125, V33 Valves	V3360E3006 or V3361E3005	
208628	Service Flange for 2 1/2", 3-way, ANSI 125, V33 Valves	V3360E2008 or V3361E2007	
208630	Service Flange for 4", 3-way, ANSI 125, V33 Valves	V3360E4004 or V3361E4003	
208631	Service Flange for 5", 3-way, ANSI 125, V33 Valves	V3360E5001 or V3361E5000	
208632	Service Flange for 6", 3-way, ANSI 125, V33 Valves	V3360E6009 or V3361E6008	
208633	Service Flange for 2 1/2", 3-way, ANSI 250, V34 Valves	V3460E2007 or V3461E2006	
208634	Service Flange for 3", 3-way, ANSI 250, V34 Valves	V3460E3005 or V3461E3004	
208635	Service Flange for 4", 3-way, ANSI 250, V34 Valves	V3460E4003 or V3461E4002	
208636	Service Flange for 5", 3-way, ANSI 250, V34 Valves	V3460E5000 or V3461E5009	
208637	Service Flange for 6", 3-way, ANSI 250, V34 Valves	V3460E6008 or V3461E6007	

V5011 Accessories

OS Number	Description
209116	Stem Button for 4 inch to 6 inch V5011 and V3350 valves
209117	Stem Button for 2 1/2 inch to 3 inch V5011 and V3350 valves
310509	Packing Gland, V5011 1/2 in. to 1 1/4 in.
310536	Valve Seat, V5011A, C, F, G, Cv 2.5
310537	Valve Seat, V5011A, C, F, G, Cv 4
310538	Valve Seat, V5011A, C, F, G, Cv 6.3
310541	Valve Seat, V5011A, C, F, G, Cv 16
310623	Packing, Teflon Cone, V5011, Steam
310890	Valve Seat, V5011A, C, F, G, Cv 6.3
311077	Valve Seat, V5011A, C, F, G, Cv 10
311078	Valve Seat, V5011A, C, F, G
311098	Spring, Disc, V5011A, C, F, G, 1/2 in. to 3 in., Cv 16
311099	Spring, Disc, V5011A, C, F, G, Cv 0.4 to 4
311100	Spring, Disc, V5011A, C, F, G,
311291	Seat, V5011A, C, F, G, 2 in., Cv 25
311430	Packing Cup, V5011, V5013, 3/8 in. stem
311565	Packing Spring, V5011
311725	Packing Spring, V5011, 2 1/2 in. NPT
311731	Seat, V5011A, C, F, G, 2 1/2 in., Cv 63
311734	Seat, V5011A, C, F, G, 3 in., Cv 100
311860	Plug, V5011A, F, 2 1/2 in., Cv 63
311861	Plug, V5011A, F, 3 in., Cv 100
313103	Disc, V5011, 3/4 in. NPT

OS Number	Description
313104	Disc, V5011, 1 in. NPT
314539	Plug, V5011C, G, 3 in. NPT, Cv 100
14004552-001	Packing Nut for V5011F, G
14004625-001	Replacement Disc, V5011A, F, Cv 0.4 to 4.0
14004625-003	Replacement Disc, V5011A, F, Cv 16
14004625-004	Replacement Disc, V5011A, F, Cv 25
14004625-005	Replacement Disc, V5011A, F, Cv 40
14004625-006	Replacement Disc, V5011A, F, Cv 63
14004625-007	Replacement Disc, V5011A, F, Cv 100
14004625-011	Replacement Disc, V5011C, G, Cv 0.4 to 4.0
14004625-012	Replacement Disc, V5011C, G, Cv 6.3 to 10
14004625-013	Replacement Disc, V5011C, G, Cv 16
14004625-014	Replacement Disc, V5011C, G, Cv 25
14004625-015	Replacement Disc, V5011C, G, Cv 40
14004625-016	Replacement Disc, V5011C, G, Cv 63
14004625-017	Replacement Disc, V5011C, G, Cv 100
311093A	Stem and Disc holder, V5011A, C, F, Cv 0.4 to 4.0
311095A	Stem and Disc holder, V5011A, C, F, Cv
311095C	Stem and Disc holder, V5011A, C, F, Cv
311619A	Stem Assembly, V5011 A, C, F, G, 3/4 in. travel, 1 1/2 in. to 3 in. NPT
311936A	Plug and Seat, V5011C, 1/2 in., Cv 6.3
311936C	Plug and Seat, V5011C, 1/2 in., Cv 1.6
311936E	Plug and Seat, V5011C, 1/2 in., Cv 0.4
311951A	Plug and Seat, V5011C, 1/2 in., Cv 4.0
311952A	Plug and Seat, V5011C, 3/4 in., Cv 6.3
311953A	Plug and Seat, V5011C, 1 in., Cv 10
311954A	Plug and Seat, V5011C, 1 1/4 in., Cv 16
312055A	Plug and Seat, V5011C, 1 1/2 in., Cv 25

Valve Accessories

OS Number	Description
197960	Bulb Guard kit
197961	Strainer
197962	Cover
197970	Air Vent
304466	Set Screw
310498	Packing Spring, V5011A, C, J
310506	Packing Follower
311057	Lubricant, Tube
311184	Guide-Cv 4.0
311270	Packing
311745	Disc Holder
312495	Hybrid button used for antispin feature found on ML642x, ML742x- fits 1/4 in. threads, made of 11/16 in. hex bar stock
312497	Packing Nut, V5013A, 4 in. to 6 in.
312498	Packing, V5013A, 4 in. to 6 in.
312499	Packing Follower, V5013A, 4 in. to 6 in.
312500	Packing Spring, V5013A, 4 in. to 6 in.
313102	Disc, 1/2 in. NPT for VP513A,B
313338	Valve Stem, 1/2 in. to 1 1/4 in. NPT for V5013
313719	Switch Assembly
14002734-001	Grease Tube

Globe Valves

OS Number	Description
14002734-002	Lubricant, packing, AMOCO H-100
14003297-001	Valve repack kit for VP526A, VP527A, VP531A. or V7527 with 3/16 inch stem
14003297-002	Teflon packing for VP531C or VP531A upgrade valves
14004623-001	Stem button for V5011F/G
32003941-001	Seat Removal Tool
32003941-002	Seat Removal Tool
126149B	Adapter Kit. Adapts V2045A Actuator to V5011A,C Valve
205699A	Stem / Bonnet Adapter for 2 1/2 in. and 3 in. flanged valves.
308078AW	Adaptor

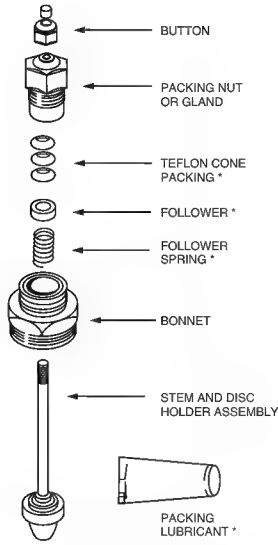
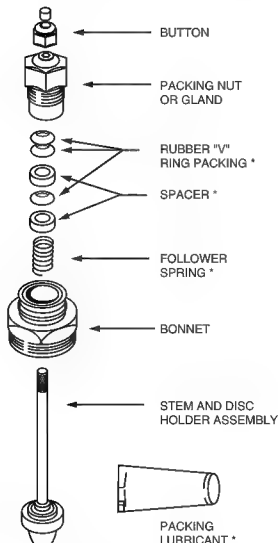
Replacement Parts for Water and Steam Valves

OS Number	Description
0901116A	Stem button for V5011N and V5013N valves

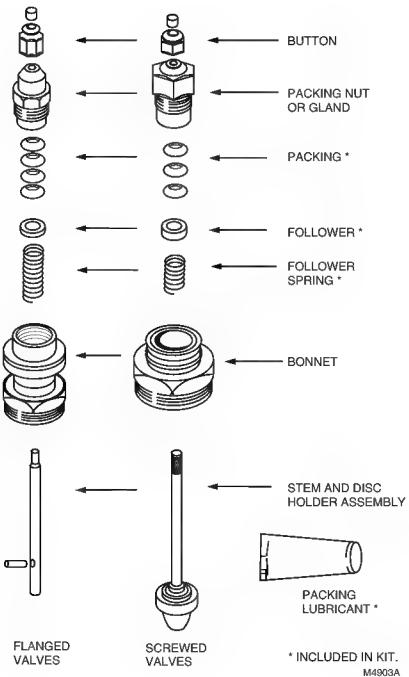
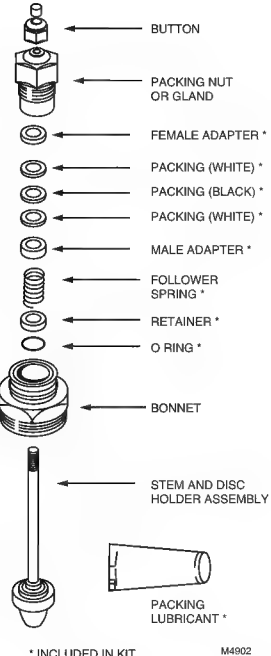
Globe Valve Rebuild Kit

OS Number	Description	Used With
0901746A	Rebuild kit for V5011N1008 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1008
0901747A	Rebuild kit for V5011N1016 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1016
0901748A	Rebuild kit for V5011N1024 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1024
0901749A	Rebuild kit for V5011N1032 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1032
0901750A	Rebuild kit for V5011N1040 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1040
0901751A	Rebuild kit for V5011N1057 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1057
0901752A	Rebuild kit for V5011N1065 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1065
0901753A	Rebuild kit for V5011N1073 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1073
0901754A	Rebuild kit for V5011N1081 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1081
0901755A	Rebuild kit for V5011N1099 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N1099
0901759A	Rebuild kit for V5011N3004 and V5013N1030 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5100N3004 or V5013N1030
0901760A	Rebuild kit for V5011N3012 and V5013N1048 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N3012 or V5013N1048
0901761A	Rebuild kit for V5011N3020 and V5013N1055 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N3020 or V5013N1055
0901762A	Rebuild kit for V5011N3038 and V5013N1063 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N3038 or V5013N1063
0901763A	Rebuild kit for V5011N3046 and V5013N1071 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N3046 or V5013N1071
0901764A	Rebuild kit for V5013N1089 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5013N1089
0901765A	Rebuild kit for V5013N1097 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5013N1097
0901786A	Repack Kit for V5011N and V5013N 1/2 inch to 1-1/4 inch valves	V5011N or V5013N
0901787A	Repack Kit for V5011N and V5013N 1-1/2 inch to 3 inch valves	V5011N or V5013N
0903422A	Rebuild kit for V5011N2006 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2006
0903423A	Rebuild kit for V5011N2014 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2014
0903424A	Rebuild kit for V5011N2022 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2022
0903425A	Rebuild kit for V5011N2030 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2030
0903426A	Rebuild kit for V5011N2048 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2048
0903427A	Rebuild kit for V5011N2055 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2055
0903428A	Rebuild kit for V5011N2063 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2063
0903429A	Rebuild kit for V5011N2071 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2071
0903430A	Rebuild kit for V5011N2089 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2089
0903431A	Rebuild kit for V5011N2097 including stem button, repack kit, packing cartridge, seat ring and plug assembly	V5011N2097

V5011 Rebuild Kits

OS Number	Description
14002694-006	Valve Repack/Rebuild Kit, V5011A, F: 1/2 in., 3/4 in., 1 in., 4 Cv or less
14002694-008	Valve Repack/Rebuild Kit, V5011C, G: 1/2 in., 3/4 in., 1 in., 4 Cv or less
14002695-006	Valve Repack/Rebuild Kit, V5011A, F: 1/2 in., 3/4 in., 1 in., 6.3 Cv or 10 Cv
14002695-008	Valve Repack/Rebuild Kit, V5011C, G: 1/2 in., 3/4 in., 1 in., 6.3 Cv or 10 Cv
14003109-006	Valve Repack/Rebuild Kit, V5011A, F: 1 1/4 in.
14003109-008	Valve Repack/Rebuild Kit, V5011C: 1 1/4 in.
14003110-006	Valve Repack/Rebuild Kit, V5011A, F: 1 1/2 in., 2 in., 2 1/2 in.
14003110-008	Valve Repack/Rebuild Kit, V5011C: 1 1/2 in., 2 in., 2 1/2 in.
14003111-006	Valve Repack/Rebuild Kit, V5011A, F: 2 in., 2 1/2 in., 3 in.
14003111-008	Valve Repack/Rebuild Kit, V5011A, F: 2 in., 2 1/2 in., 3 in.
14003294-002	Valve Repack Kit, Steam or water application
	 <p>* INCLUDED IN KIT. M8280A</p>
14003294-004	Valve Repack Kit, V5011A, C, F, G, V5013A, F with 3/8 in. stem for water service
	 <p>* INCLUDED IN KIT. M8290A</p>

Globe Valves

OS Number	Description
14003295-002	Valve Repack Kit, V5011A, C, F, G, V5013A, F with 3/8 in. stem for steam service  <p>FLANGED VALVES</p> <p>SCREWED VALVES</p> <p>* INCLUDED IN KIT. M4903A</p>
14003295-004	Valve Repack Kit, V5011A, C, F, G, V5013A, F with 3/8 in. stem, for water  <p>* INCLUDED IN KIT. M4902</p>
14003296-002	Valve Repack Kit, V5011A, C, F, G, V5013A, F with 1/2 in. stem

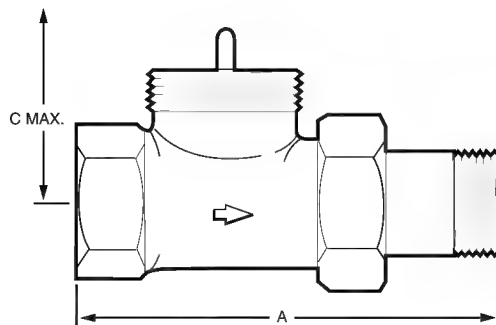
V5086; T5086; Y5086 Thermostatic Radiator Valves



Control room temperature by modulating the flow of hot water or steam through free-standing radiators, convectors or baseboard units.

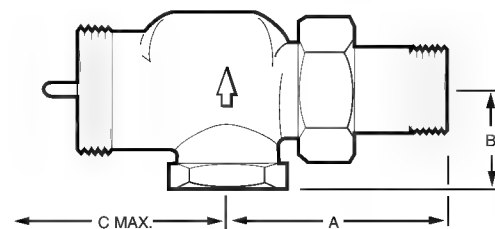
- V5086 valve body mounts on radiator or convector.
- T5086 nonelectric thermostatic actuator mounts directly on V5086 valve body and modulates hot water or steam flow through valve in response to room temperature changes.
- Actuator available with integral or remote sensor, and integral or remote setpoint adjustment.
- Valves provide modulating temperature control to reduce energy consumption, eliminate overheating.
- Actuator responds to small changes in room temperature.
- Valve cartridge can be changed without system shutdown or drain down.
- No electric power required.

Dimension Diagrams



SIZE (INCHES)	A	C MAX. ^a
1/2	3-3/4 (95)	4-3/4 (121)
3/4	4-1/8 (105)	4-3/4 (121)
1	4-15/16 (125)	4-3/4 (121)
1-1/4	5-7/8 (149)	5 (127)

^a C MAX. DIMENSION IS WITH CONTROL INSTALLED.
M3216

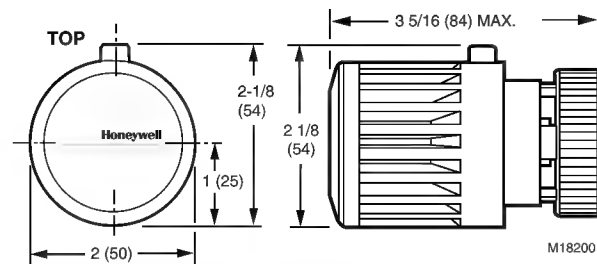
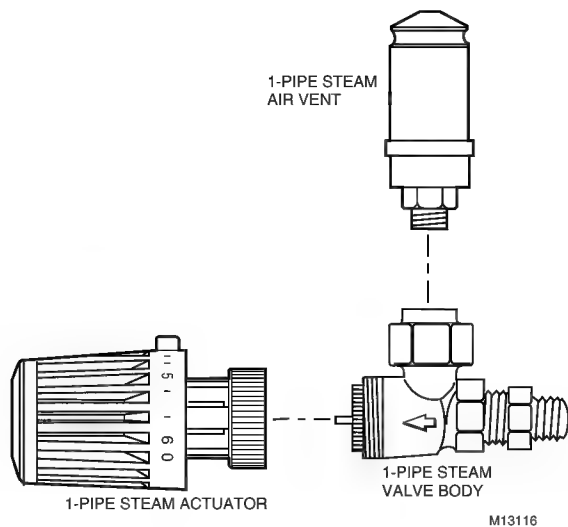


SIZE (INCHES)	A	B	C MAX. ^a
1/2	2-1/4 (57)	1 (25)	5-1/8 (130)
3/4	2-9/16 (65)	1-1/8 (29)	5-1/4 (133)
1	2-15/16 (75)	1-3/16 (30)	5-1/4 (133)
1-1/4	3-1/2 (89)	2-3/16 (56)	5-1/4 (133)

^a C MAX. DIMENSION IS WITH CONTROL INSTALLED.

M3218

Thermostatic Radiator Valves



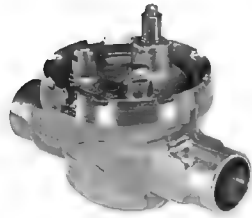
Valve Type: Thermostatic Radiator Valve
Controlled Medium: Hot Water, Steam
Temperature Range: 43 F to 79 F (6 C to 26 C)
Materials:

	Body	Seat	Stem	Cartridge
V5086A	Bronze	EPDM	Stainless Steel	EPDM
V5086B	Brass	EPDM	Stainless Steel	EPDM
Y5086A	Nickel-plated Brass	—	—	—

Product Number	ANSI Body Class	Capacity		Flow Characteristics	Nominal Pipe Size	Pipe Connections	Valve Action	Stem Travel		Maximum Operating Pressure		Comments
		Cv	Kv					(inch)	(mm)	(psi)	(kPa)	
* T5086A1009	—	—	—	—	—	—	—	—	—	—	—	—
* T5086B1007	—	—	—	—	—	—	—	—	—	—	—	—
* T5086C1005	—	—	—	—	—	—	—	—	—	—	—	—
* V5086A1007	150	4.6 Cv	4 Kv	Two position	1/2 in.	Sweat	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1015	150	4.6 Cv	4 Kv	Two position	1/2 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1023	150	4.6 Cv	4 Kv	Two position	1/2 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	Angle
* V5086A1031	150	5.8 Cv	5 Kv	Two position	3/4 in.	Sweat	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1049	150	5.8 Cv	5 Kv	Two position	3/4 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1056	150	5.8 Cv	5 Kv	Two position	3/4 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	Angle
* V5086A1064	150	7 Cv	6 Kv	Two position	1 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1072	150	7 Cv	6 Kv	Two position	1 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	Angle
* V5086A1080	150	7 Cv	6 Kv	Two position	1 1/4 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	straight through
* V5086A1098	—	7 Cv	6 Kv	Two position	1 1/4 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	Angle
V5086B1013	—	—	—	One pipe	1/8 in.	NPT	Stem down to close	2/9 in.	6 mm	150 psi	1034 kPa	Angle-on pipe
Y5086A1012	—	—	—	—	—	1/8 in. NPT male	—	—	—	—	—	Includes Steam Vent

* TRADELINE models • SUPER TRADELINE models

VU52; VU53 Two-way Fan Coil Valves



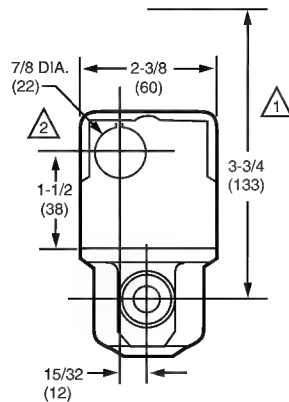
The VU52 and VU53 high pressure zone valves are used to control the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors.

IMPORTANT

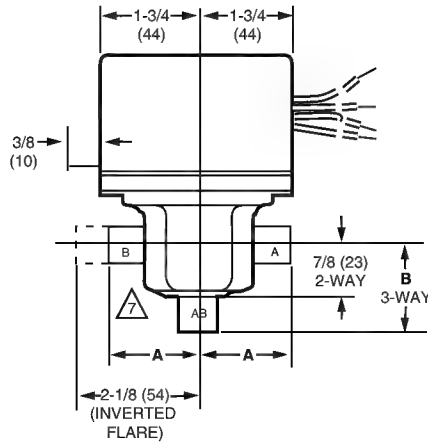
These valves are not for use in systems containing dissolved oxygen.

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU52 and VU53 provide 2-way, straight-through control of water. Available in normally closed (VU53) or normally open (VU52) configurations.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defence against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Choice of NPT end connections for iron or steel piping.

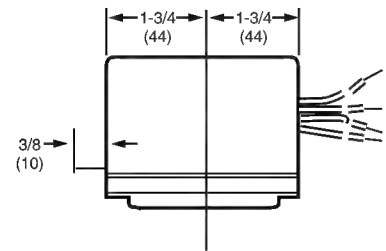
Dimension Diagrams



VU53 VALVE WITH VU448 ACTUATOR



VU53 AND VU54 VALVE WITH ACTUATOR



VU5 ACTUATOR

- 1 HEIGHT NEEDED TO REMOVE ACTUATOR OR COVER
- 2 OPENING FOR 1/2 IN. CONDUIT ON OPPOSITE SITE OF MANUAL LEVER FOR ALL MODELS.

VALVE BODY SIZE	A	B
1/2 IN. SWEAT	1-5/6 (33)	1-5/6 (33)
3/4 IN. SWEAT	1-3/8 (35)	1-11/16 (43)
1 IN. SWEAT	1-11/16 (43)	1-11/16 (43)
1/2 IN. NPT	1-3/8 (35)	1-5/16 (33)
3/4 IN. NPT	1-11/16 (43)	1-7/16 (37)

M18261

Application Type: Chilled water, Hot Water

Body Pattern: Two-way

Valve Type: Fan Coil

Controlled Medium: Hot Water, Chilled Water with up to 50% Glycol

Dimensions, A to B ports End to End: 3 3/4 in. (94 mm)

Temperature Range: 34 to 125 F ambient at 200 F Fluid
(1 to 52 C ambient at 93 C Fluid)

Maximum Operating Pressure: 300 psig (2068 kPa)

Materials:

Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
Brass	Brass	Brass	EPDM rubber	Buna-N rubber

Fan Coil/Zone Valves

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Maximum Close-Off Pressure		Maximum Differential Pressure	
		Cv	Kv				(psi)	(kPa)	(psi)	(kPa)
VU52N1001	3/4 in	8.0 Cv	7.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Open	10 psi	69 kPa	10 psi	69 kPa
VU52N1019	1/2 in	3.5 Cv	3.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Open	20 psi	138 kPa	20 psi	138 kPa
VU52N1027	1/2 in	1.0 Cv	0.9 Kv	Quick Opening	NPT (Internal Thread)	Normally Open	50 psi	345 kPa	50 psi	345 kPa
VU52N1035	1/2 in	2.5 CV	2.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Open	30 psi	207 kPa	30 psi	207 kPa
VU52S2002	1/2 in	1.0 Cv	0.9 Kv	Quick Opening	Sweat	Normally Open	50 psi	345 kPa	50 psi	345 kPa
VU52S2010	1/2 in	2.5 CV	2.0 Kv	Quick Opening	Sweat	Normally Open	30 psi	207 kPa	30 psi	207 kPa
VU52S2028	1/2 in	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Normally Open	20 psi	138 kPa	20 psi	138 kPa
VU52S2036	3/4 in	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Normally Open	20 psi	138 kPa	20 psi	138 kPa
VU52S2044	3/4 in	5.0 Cv	4.3 Kv	Quick Opening	Sweat	Normally Open	15 psi	103 kPa	15 psi	103 kPa
VU52S2051	3/4 in	8.0 Cv	7.0 Kv	Quick Opening	Sweat	Normally Open	10 psi	69 kPa	10 psi	69 kPa
VU53F1008	1/2 in	3.5 Cv	3.0 Kv	Quick Opening	Inverted Flare	Normally Closed	20 psi	138 kPa	20 psi	138 kPa
VU53F1016	3/8 in	3.5 Cv	3.0 Kv	Quick Opening	Inverted Flare	Normally Closed	20 psi	138 kPa	20 psi	138 kPa
VU53N1009	1/2 in	3.5 Cv	3.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	20 psi	138 kPa	20 psi	138 kPa
VU53N1017	3/4 in	8.0 Cv	7.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	10 psi	69 kPa	10 psi	69 kPa
VU53N1026	1 in	8.0 Cv	7.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	10 psi	69 kPa	10 psi	69 kPa
VU53N1033	3/4 in	3.5 Cv	3.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	20 psi	138 kPa	20 psi	138 kPa
VU53N1041	1/2 in	1.0 Cv	0.9 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	50 psi	345 kPa	50 psi	345 kPa
VU53N1058	1/2 in	2.5 CV	2.0 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	30 psi	207 kPa	30 psi	207 kPa
VU53N1066	3/4 in	5.0 Cv	4.3 Kv	Quick Opening	NPT (Internal Thread)	Normally Closed	15 psi	103 kPa	15 psi	103 kPa
VU53S2000	1 in	8.0 Cv	7.0 Kv	Quick Opening	Sweat	Normally Closed	10 psi	69 kPa	10 psi	69 kPa
VU53S2018	1/2 in	1.0 Cv	0.9 Kv	Quick Opening	Sweat	Normally Closed	50 psi	345 kPa	50 psi	345 kPa
VU53S2034	1/2 in	3.5 Cv	3.0 Kv	Quick Opening	Sweat	Normally Closed	20 psi	138 kPa	20 psi	138 kPa
VU53S2059	3/4 in	8.0 Cv	7.0 Kv	Quick Opening	Sweat	Normally Closed	10 psi	69 kPa	10 psi	69 kPa
VU53S2067	1/2 in	1.0 Cv	0.9 Kv	Quick Opening	Sweat	Normally Closed	50 psi	345 kPa	50 psi	345 kPa
VU53S2075	3/4 in	5.0 Cv	4.3 Kv	Quick Opening	Sweat	Normally Closed	15 psi	103 kPa	15 psi	103 kPa

* TRADELINE models • SUPER TRADELINE models

VU54 Three-way Fan Coil Valves



The VU54 high pressure zone valves are used to control the flow of hot or chilled water in commercial HVAC equipment such as fan coil units, terminal reheat coils and convectors.

IMPORTANT

These valves are not for use in systems containing dissolved oxygen.

- Compact construction for easy installation.
- Fits under the cover of most baseboard convectors with actuator fitted to valve body.
- VU54 provides diverting control of water when plumbed after coil.
- 300 psi (2,000 kPa, PN20) operating pressure rating.
- Patented ball seal provides long service life, soft close off.
- Triple O-ring seal provides three lines of defence against corrosion and water leakage around drive shaft.
- Quick opening flow curve.
- Choice of NPT end connections for iron or steel piping.

Dimension Diagrams

See diagram on page 541

Application Type: Chilled water, Hot Water

Body Pattern: Three-way

Valve Type: Fan Coil

Controlled Medium: Hot Water, Chilled Water with up to 50% Glycol
Dimensions, Center Line of A&B ports to end of AB port: 1-5/16 in. (33 mm)

Dimensions, A to B ports End to End: 3 7/16 in. (86 mm)

Temperature Range: 34 to 125 F ambient at 200 F Fluid
(1 to 52 C ambient at 93 C Fluid)

Maximum Operating Pressure: 300 psig (2068 kPa)

Materials:

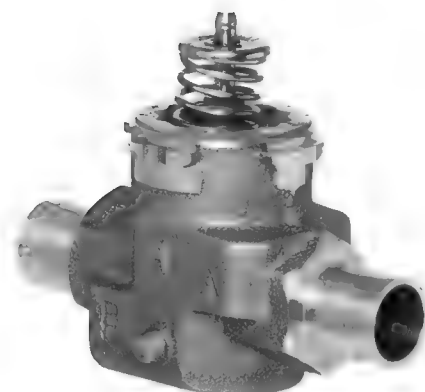
Body	Seat	Stem	Packing/O-Rings	Trim (Plug/Ball/Disc)
Brass	Brass	Brass	EPDM rubber	Buna-N rubber

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Maximum Close-Off Pressure		Maximum Differential Pressure	
		Cv	Kv				(psi)	(kPa)	(psi)	(kPa)
VU54F1022	1/2 in.	4.0 Cv	3.4 Kv	Quick Opening	Inverted Flare	Mixing	20 psi	138 kPa	20 psi	138 kPa
VU54N1007	1/2 in.	4.0 Cv	3.4 Kv	Quick Opening	NPT (Internal Thread)	Mixing	20 psi	138 kPa	20 psi	138 kPa
VU54N1015	3/4 in.	7.0 Cv	6.0 Kv	Quick Opening	NPT (Internal Thread)	Mixing	10 psi	69 kPa	10 psi	69 kPa
VU54N1031	3/4 in.	4.0 Cv	3.4 Kv	Quick Opening	NPT (Internal Thread)	Mixing	20 psi	138 kPa	20 psi	138 kPa
VU54N1049	3/4 in.	5.0 Cv	4.3 Kv	Quick Opening	NPT (Internal Thread)	Mixing	15 psi	103 kPa	15 psi	103 kPa
VU54S2016	3/4 in.	7.0 Cv	6.0 Kv	Quick Opening	Sweat	Mixing	10 psi	69 kPa	10 psi	69 kPa
VU54S2024	1 in.	7.0 Cv	6.0 Kv	Quick Opening	Sweat	Mixing	10 psi	69 kPa	10 psi	69 kPa
VU54S2057	3/4 in.	5.0 Cv	4.3 Kv	Quick Opening	Sweat	Mixing	15 psi	103 kPa	15 psi	103 kPa
VU54S2008	1/2 in.	4.0 Cv	3.4 Kv	Quick Opening	Sweat	Mixing	10 psi	69 kPa	10 psi	69 kPa

* TRADELINE models • SUPER TRADELINE models

Cartridge Cage Valves

VCZA; VCZB Two-way Cartridge Cage Valves



These 2-position (open/closed) hydronic valves are intended for use in a normal indoor environment to control the flow of hot and/or cold water, or glycol solution to 50% concentration.

These valves are designed for on-off "zone" control of heating/cooling systems, or to control individual fan coil, baseboard radiator or convector applications.

Depending on the model selected they can be controlled by either a low or line voltage SPST or SPDT controller, such as a room thermostat, aquastat or flow switch.



For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

Do not use boiler additives, solder flux and wetted materials which are petroleum based or contain mineral oil, hydrocarbons, or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

Body Pattern: Two-way

Valve Type: Unitary

Controlled Medium: Water w/max of 50% Glycol

Ambient Temperature Range: 32 F to 150 F (0 C to 65 C)

Fluid Temperature Range: 36 F to 230 F (1 C to 95 C)

Timing (sec, min)

when used with VC series Actuator: On, off models: 6 sec

Floating and modulating models: 2 min.

Maximum Close-Off Pressure: 60 psi (4 Bar)

Maximum Operating Pressure: 300 psi (20 Bar)

Approvals:

Canadian Standards Association: CSA Certified

Materials:

Body	Stem	Packing/O-Rings	Cartridge
Bronze	Stainless Steel	EPDM rubber	Ryton™, Noryl™ engineering plastic

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Fitting Size	Comments	Includes
		Cv	Kv						
VCZAA1100	1/2 in.	3.5 Cv	3 Kv	Linear	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAA1400	1/2 in.	2.9 Cv	2.5 Kv	Equal Percentage	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAA1500	1/2 in.	0.7 Cv	0.6 Kv	Equal Percentage	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAA1600	1/2 in.	1.3 Cv	1.1 Kv	Equal Percentage	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators	Cartridge changing tool
VCZAD1100	1/2 in.	3.1 Cv	2.6 Kv	Linear	Flare	Stem up to close A port	5/8 in.	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZAE1100	1/2 in.	3.2 Cv	2.7 Kv	Linear	Inverted Flare	Stem up to close A port	5/8 in.	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZAL1100	3/4 in.	4.7 Cv	4 Kv	Linear	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZAL1400	3/4 in.	3.9 Cv	3.4 Kv	Equal Percentage	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—

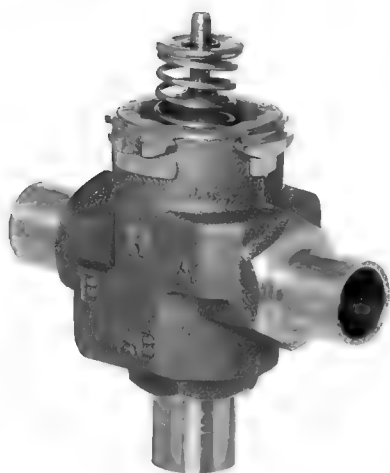
* TRADELINE models • SUPER TRADELINE models

Cartridge Cage Valves

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Fitting Size	Comments	Includes
		Cv	Kv						
VCZAM1100	3/4 in.	4.6 Cv	3.9 Kv	Linear	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAM1400	3/4 in.	3.9 Cv	3.4 Kv	Equal Percentage	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAR1100	1 in.	6.6 Cv	5.7 Kv	Linear	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZAR1400	1 in.	4.2 Cv	3.6 Kv	Equal Percentage	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZAS1100	1 in.	6.6 Cv	5.7 Kv	Linear	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
VCZAS1400	1 in.	4.2 Cv	3.6 Kv	Equal Percentage	Sweat	Stem up to close A port	—	It can be controlled by either a low or a line voltage spdt or spst or floating controller characterized cartridge for use with floating and modulating actuators	Cartridge changing tool
VCZBB1100	1/2 in.	3.5 Cv	2.7 Kv	Linear	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZBB1400	1/2 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZBB1500	1/2 in.	0.7 Cv	0.6 Kv	Equal Percentage	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators	—
VCZBB1600	1/2 in.	1.3 Cv	1.1 Kv	Equal Percentage	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators	—
VCZBD1100	1 1/4 in.	7 Cv	6 Kv	Linear	Female NPT	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	—
VCZBE1100	1 1/4 in.	7 Cv	6 Kv	Linear	Sweat	Stem up to close A port	—	characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller	Cartridge changing tool
* TRADELINE models • SUPER TRADELINE models									

Cartridge Cage Valves

VCZM; VCZN Three-way Cartridge Cage Valves



These two position 3-way hydronic valves are intended for use in a normal indoor environment to control the flow of hot and/or cold water, or glycol solution to 50% concentration.

These valves can be piped for either diverting or mixing valve applications in central heating and/or cooling systems; or for individual fan coil, radiator or convector applications.

Depending on the model selected they can be controlled by either a low or line voltage SPST or SPDT controller such as a room thermostat, aquastat or flow switch.



For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

Do not use boiler additives, solder flux and wetted materials which are petroleum based or contain mineral oil, hydrocarbons, or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

Comments: characterized cartridge for use with floating and modulating actuators. It can be controlled by either a low or a line voltage spdt or spst or floating controller.

Approvals:

Canadian Standards Association: CSA Certified

Materials:

Body	Stem	Packing O-Rings	Cartridge
Bronze	Stainless Steel	EPDM rubber	Ryton™, Noryl™ engineering plastic

Dimensions, Approximate: Body Pattern: Three-way

Valve Type: Unitary

Controlled Medium: Water w/max of 50% Glycol

Ambient Temperature Range: 32 F to 150 F (0 C to 65 C)

Fluid Temperature Range: 34 F to 203 F (1 C to 95 C)

Timing (sec, min) when used with VC series Actuator:

On, off models: 6 sec

Floating and modulating models: 2 min.

Maximum Close-Off Pressure: 60 psi (4 Bar)

Maximum Operating Pressure: 300 psi (20 Bar)

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Fitting Size	Includes
		Cv	Kv					
VCZMA6100	1/2 in.	3.8 Cv	3.3 Kv	Linear	Sweat	Stem up to close A port	—	Cartridge changing tool
VCZMC6100	1/2 in.	3.8 Cv	3.2 Kv	Linear	Flare	Stem up to close A port	5/8 in.	—
VCZMD6100	1/2 in.	3.2 Cv	2.7 Kv	Linear	Inverted Flare	Stem up to close A port	—	—
VCZMK6100	3/4 in.	6.6 Cv	5.7 Kv	Linear	Female NPT	Stem up to close A port	—	—
VCZML6100	3/4 in.	5.9 Cv	5.1 Kv	Linear	Sweat	Stem up to close A port	—	Cartridge changing tool
VCZMR6100	1 in.	8.6 Cv	7.4 Kv	Linear	Female NPT	Stem up to close A port	—	—
VCZMS6100	1 in.	9 Cv	7.8 Kv	Linear	Sweat	Stem up to close A port	—	Cartridge changing tool
VCZNB6100	1/2 in.	3.7 Cv	3.2 Kv	Linear	Female NPT	Stem up to close A port	—	—
VCZND6100	1 1/4 in.	9 Cv	7.8 Kv	Linear	Female NPT	Stem up to close A port	—	—
VCZNE6100	1 1/4 in.	9 Cv	7.8 Kv	Linear	Sweat	Stem up to close A port	—	Cartridge changing tool

* TRADELINE models • SUPER TRADELINE models

VCZZ Valve Replacement Cartridges



Control central heating and/or cooling systems, fan coil systems, radiators and convectors. Depending on the model selected, it can be controlled by either a low or line voltage SPST or SPDT or floating or modulating controller such as a room thermostat, Aquastat control, flow switch or a 0/2 to 10 Vdc controller, thermostat, aquastat or flow switch.



For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

Do not use boiler additives, solder flux and wetted materials which are petroleum based or contain mineral oil, hydrocarbons, or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

- Use with two-way or three-way valves.
- Minimal actuator power consumption.
- Double insulated actuator.
- Quick-connect or one meter cable electrical connections available.
- Quick and easy replacement of moving parts.
- Actuator head installation does not require draining the system.
- On/Off models with six second nominal timing (floating/modulating models available with 120 second timing).

Application Type: Water, Not suitable for steam
Controlled Medium: Water w/max of 50% Glycol
Stem Travel: 0.4 in. (10 mm)

Materials:

Cartridge	Stem
Ryton & Noryl plastic	Stainless Steel

Product Number	Application	Dimensions, Approximate		Flow Characteristics	Used With Actuator	Used With
		(inch)	(mm)			
VCZZ1000	Replacement cartridge for VC series 2-way valves	1-1/2" diameter x 2-9/16 high	37 mm diameter x 65 mm high	Quick Opening	All On-Off VC series actuators	Two-way VC Valves
VCZZ1100	Replacement cartridge for VC series 2-way valves	1-1/2" diameter x 2-9/16 high	37 mm diameter x 65 mm high	Linear	All VC actuators	Two-way VC Valves
VCZZ1400	Replacement cartridge for VC series 2-way valves	1-1/2" diameter x 2-9/16 high	37 mm diameter x 65 mm high	Equal Percentage	All VC actuators	Two-way VC Valves
VCZZ1500	Replacement cartridge for VC series 2-way valves	1-1/2" diameter x 2-9/16 high	37 mm diameter x 65 mm high	Equal Percentage Extra Low Flow	VC series Floating or Modulating actuator	Two-way VC Valves
VCZZ1600	Replacement cartridge for VC series 2-way valves	1-1/2" diameter x 2-9/16 high	37 mm diameter x 65 mm high	Equal Percentage Low Flow	VC series Floating or Modulating actuator	Two-way VC Valves
VCZZ6000	Replacement cartridge for VC series 3-way valves	1-1/2" diameter x 3-1/8 high	37 mm diameter x 80 mm high	Quick Opening	All On-Off VC series actuators	Three-way VC Valves
VCZZ6100	Replacement cartridge for VC series 3-way valves	1-1/2" diameter x 3-1/8 high	37 mm diameter x 80 mm high	Linear	All VC actuators	Three-way VC Valves

* TRADELINE models • SUPER TRADELINE models

Cartridge Globe Valves

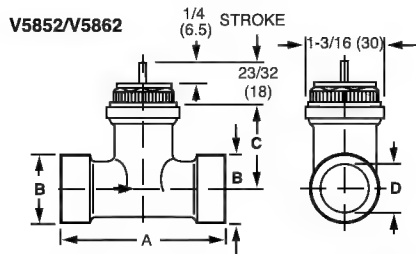
V5852; V5862 Two-way Small Linear Valves



Control hot and/or chilled water for VAV terminal units, fan coil units, small reheaters and recoolers in electric/electronic temperature control systems. Used with the M6410 3-position floating Non-Spring Return Valve Actuator and the M7410 selectable 0 to 10 Vdc or 2 to 10 Vdc Non-Spring Return Actuator. The 1/2" and 3/4" valves are compatible with the M6435 floating Spring Return Actuator, the M7435 selectable 0 to 10 Vdc or 2 to 10 Vdc Spring Return Actuator, and the MP958 Pneumatic Actuator. Larger valves (1" through 1-1/2") are pressure balanced, which results in higher close-off pressures.

- Long stroke allows wider range of control.
- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and Stainless Steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

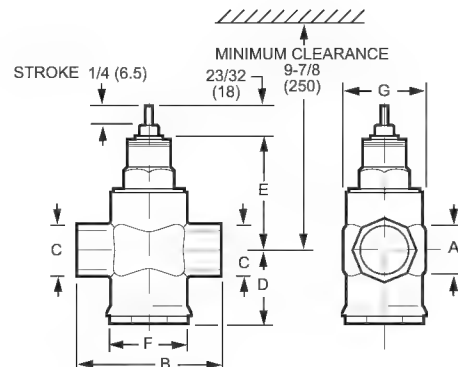
Dimension Diagrams



VALVE SIZE	A	B	C	D (NPT)	D (SWEAT)
1/2 (13)	3 (77)	3/4 (19)	1-5/16 (34)	1/2 (13)	5/8 (16)
3/4 (19)	3-1/2 (88)	1 (25)	1-1/4 (32)	3/4 (19)	7/8 (22)

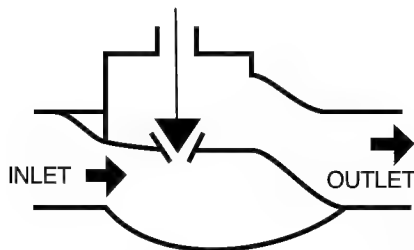
NOTE: SOLDER ENDS CONFORM TO ANSI B16-18

M18917



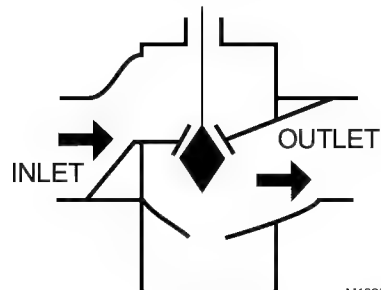
VALVE SIZE A (NPT)	B	C	D	E	F	G
1 (25)	4-1/8 (105)	1-5/8 (41)	2-1/16 (53)	3-5/8 (92)	2 (50)	1-3/4 (44)
1-1/4 (32)	4-15/16 (125)	2 (50)	2-7/16 (62)	3-5/8 (92)	2-3/16 (55)	2-1/4 (57)
1-1/2 (38)	5-1/8 (130)	2-3/16 (55)	2-9/16 (65)	3-7/8 (98)	2-3/8 (60)	2-5/8 (67)

Flow Diagrams for 1/2 and 3/4 inch valves



M18918

Flow Diagrams for 1, 1-1/4 and 1-1/2 inch valves



M18955

Cartridge Globe Valves

Body Pattern: Two-way

Valve Type: Cartridge Globe

Controlled Medium: Water w/max of 50% Glycol

Temperature Range: 36 F to 230 F (2 C to 110 C)

Leakage Rating (%): less than 0.02% of Cv

Stem Travel: 1/4 in. (6.4 mm)

Maximum Operating Pressure: 235 psi (1620 kPa)

Materials:

Body	Seat	Stem	Trim (Plug/Ball/Disc)
Brass	Brass	Stainless Steel	Brass

Accessories:

WV108B Brush Tool for Valve Cleaning 1/2" and 3/4" V5852/V5853/V5862/V5863

WV108M Insert Replacement Tool for 1/2" and 3/4" V5852/V5853/V5862/V5863

WV3000R Insert Replacement Tool for 1", 1-1/4" and 1-1/2" V5862/V5863

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Maximum Close-Off Pressure		Used With
		Cv	Kv				(psi)	(kPa)	
V5852A2007	1/2 in.	0.19 Cv	0.16 Kv	Equal Percentage	Female Sweat	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2015	1/2 in.	0.29 Cv	0.25 Kv	Equal Percentage	Female Sweat	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2023	1/2 in.	0.47 Cv	0.41 Kv	Equal Percentage	Female Sweat	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2031	1/2 in.	0.74 Cv	0.6 Kv	Equal Percentage	Female Sweat	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2049	1/2 in.	1.2 Cv	1 Kv	Equal Percentage	Female Sweat	Stem down to close	174 psi	1200 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2056	1/2 in.	1.9 Cv	1.6 Kv	Equal Percentage	Female Sweat	Stem down to close	174 psi	1200 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2005	1/2 in.	0.19 Cv	0.16 Kv	Equal Percentage	Female NPT	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2013	1/2 in.	0.29 Cv	0.25 Kv	Equal Percentage	Female NPT	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2021	1/2 in.	0.47 Cv	0.41 Kv	Equal Percentage	Female NPT	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2039	1/2 in.	0.74 Cv	0.64 Kv	Equal Percentage	Female NPT	Stem down to close	232 psi	1600 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2047	1/2 in.	1.2 Cv	1 Kv	Equal Percentage	Female NPT	Stem down to close	174 psi	1200 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2054	1/2 in.	1.9 Cv	1.6 Kv	Equal Percentage	Female NPT	Stem down to close	174 psi	1200 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2064	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female Sweat	Stem down to close	58 psi	400 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5852A2072	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female Sweat	Stem down to close	58 psi	400 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2062	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female NPT	Stem down to close	58 psi	400 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A2070	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female NPT	Stem down to close	58 psi	400 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5862A3003	1 in.	5.5 Cv	4.8 Kv	Linear	Female NPT	Stem up to close	232 psi	1600 kPa	M7410F3006, M6410A3017
V5862A3011	1 in.	7.8 Cv	6.7 Kv	Linear	Female NPT	Stem up to close	232 psi	1600 kPa	M7410F3006, M6410A3017
V5862A3029	1 in.	11 Cv	9.5 Kv	Linear	Female NPT	Stem up to close	232 psi	1600 kPa	M7410F3006, M6410A3017
V5862A3037	1 1/4 in.	18 Cv	15.6 Kv	Linear	Female NPT	Stem up to close	174 psi	1200 kPa	M7410F3006, M6410A3017
V5862A3045	1 1/2 in.	25 Cv	21.6 Kv	Linear	Female NPT	Stem up to close	145 psi	1000 kPa	M7410F3006, M6410A3017

* TRADELINE models • SUPER TRADELINE models

Cartridge Globe Valves

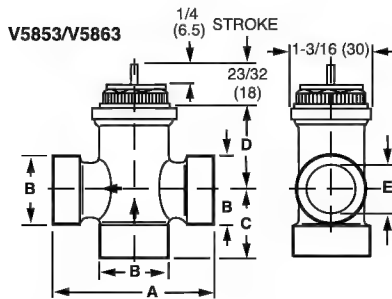
V5853; V5863 Three-way Small Linear Valves



Control hot and/or chilled water for VAV terminal units, fan coil units, small reheaters and recoolers in electric/ electronic temperature control systems. Used with the M6410 3-position floating Non-Spring Return Valve Actuator and the M7410 selectable 0 to 10 Vdc or 2 to 10 Vdc Non-Spring Return Actuator. The 1/2" and 3/4" valves are also compatible with the M6435 floating Spring Return Actuator, the M7435 selectable 0 to 10 Vdc or 2 to 10 Vdc Spring Return Actuator, and the MP958 Pneumatic Actuator.

- Long stroke allows wider range of control.
- Soft valve seat provides low leakage rate.
- Inserts for 1/2 in. and 3/4 in. valves are changeable without draining valve when used with an insert replacement tool.
- Brass body and stainless steel stem.
- Threaded plastic cover/manual handle allows manual operation.
- Easily installed in areas where space is limited.

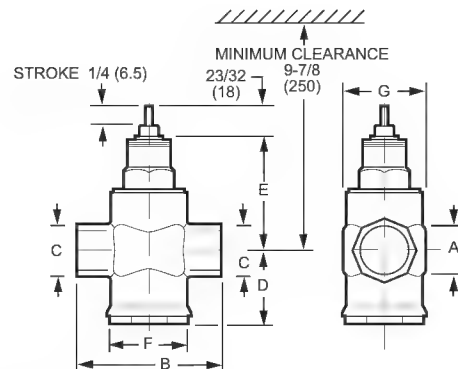
Dimension Diagrams



VALVE SIZE	A	B	C	D	E (NPT)	E (SWEAT)
1/2 (13)	3 (77)	3/4 (19)	1-5/16 (34)	1-5/16 (34)	1/2 (13)	5/8 (16)
3/4 (19)	3-1/2 (88)	1 (25)	1-1/2 (38)	1-1/4 (32)	3/4 (19)	7/8 (22)

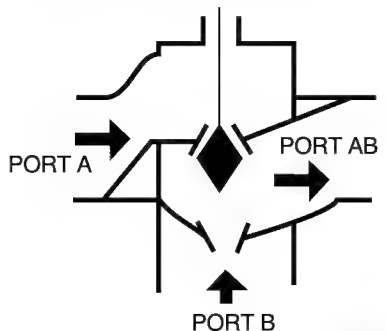
NOTE: SOLDER ENDS CONFORM TO ANSI B16-18

M18919

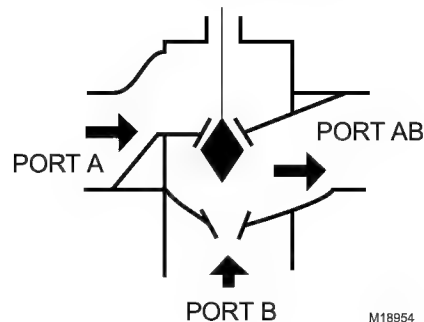


VALVE SIZE A (NPT)	B	C	D	E	F	G
1 (25)	4-1/8 (105)	1-5/8 (41)	2-1/16 (53)	3-5/8 (92)	2 (50)	1-3/4 (44)
1-1/4 (32)	4-15/16 (125)	2 (50)	2-7/16 (62)	3-5/8 (92)	2-3/16 (55)	2-1/4 (57)
1-1/2 (38)	5-1/8 (130)	2-3/16 (55)	2-9/16 (65)	3-7/8 (98)	2-3/8 (60)	2-5/8 (67)

Flow Diagrams for 1/2 and 3/4 inch valves



Flow Diagrams for 1, 1-1/4 and 1-1/2 inch valves



Cartridge Globe Valves

Body Pattern: Three-way

Valve Type: Cartridge Globe

Controlled Medium: Water w/max of 50% Glycol

Temperature Range: 36 F to 230 F (2 C to 110 C)

Leakage Rating (%): less than 0.02% of Cv

Stem Travel: 1/4 in. (6.4 mm)

Maximum Operating Pressure: 235 psi (1620 kPa)

Materials:

Body	Seat	Stem	Trim (Plug/Ball/Disc)
Brass	Brass	Stainless Steel	Brass

Accessories:

WV108B Brush Tool for Valve Cleaning 1/2" and 3/4" V5852/V5853/V5862/V5863

WV108M Insert Replacement Tool for 1/2" and 3/4" V5852/V5853/V5862/V5863

WV3000R Insert Replacement Tool for 1", 1-1/4" and 1-1/2" V5862/V5863

Product Number	Nominal Pipe Size	Capacity		Flow Characteristics	Pipe Connections	Valve Action	Maximum Close-Off Pressure		Used With
		Cv	Kv				(psi)	(kPa)	
V5853A2006	1/2 in.	0.29 Cv	.25 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	116 psi	800 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2014	1/2 in.	0.47 Cv	.41 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	116 psi	800 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2022	1/2 in.	0.74 Cv	.64 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	36 psi	248 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2030	1/2 in.	1.2 Cv	1 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	36 psi	248 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2048	1/2 in.	1.9 Cv	1.6 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2004	1/2 in.	0.29 Cv	0.25 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	116 psi	800 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2012	1/2 in.	0.47 Cv	0.41 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	116 psi	800 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2020	1/2 in.	0.74 Cv	0.64 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	36 psi	248 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2038	1/2 in.	1.2 Cv	1 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	36 psi	248 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2046	1/2 in.	1.9 Cv	1.6 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A1008	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A1016	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2055	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	7.25 psi	50 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5853A2063	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female Sweat	Stem down to close B to AB	7.25 psi	50 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A1006	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A1014	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	34 psi	234 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2053	3/4 in.	2.9 Cv	2.5 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	7.25 psi	50 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A2061	3/4 in.	4.9 Cv	4.2 Kv	Equal Percentage	Female NPT	Stem down to close B to AB	7.25 psi	50 kPa	M7435F1001, M6435A1004, M7410F1000, M6410A1029
V5863A3002	1 in.	5.5 Cv	4.8 Kv	Linear	Female NPT	Stem down to close B to AB	232 psi	1600 kPa	M7410F3006, M6410A3017
V5863A3010	1 in.	7.8 Cv	6.7 Kv	Linear	Female NPT	Stem down to close B to AB	232 psi	1600 kPa	M7410F3006, M6410A3017
V5863A3028	1 in.	11 Cv	9.5 Kv	Linear	Female NPT	Stem down to close B to AB	232 psi	1600 kPa	M7410F3006, M6410A3017
V5863A3036	1 1/4 in.	18 Cv	15.6 Kv	Linear	Female NPT	Stem down to close B to AB	174 psi	1200 kPa	M7410F3006, M6410A3017
V5863A3044	1 1/2 in.	25 Cv	21.6 Kv	Linear	Female NPT	Stem down to close B to AB	145 psi	1000 kPa	M7410F3006, M6410A3017

* TRADELINE models • SUPER TRADELINE models

Cartridge Globe Valves

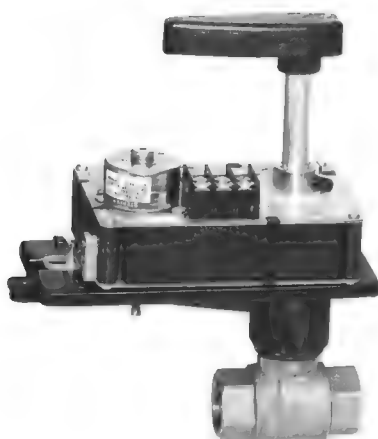
Cartridge Globe Valve Accessories

OS Number	Description	Used With
WV108B	Brush Tool for Valve Cleaning 1/2" and 3/4" V5852/V5853/V5862/V5863	V5852 or V5862 or V5853 or V5863
WV108M	Insert Replacement Tool for 1/2" and 3/4" V5852/V5853/V5862/V5863	V5852 or V5862 or V5853 or V5863
WV3000R	Insert Replacement Tool for 1", 1-1/4" and 1-1/2" V5862/V5863	V5862 or V5863

Cartridge Globe Valve Replacement Parts

OS Number	Description	Used With
0902807	Replacement Insert for 1/2 inch V5852/V5862	V5852A2056 or V5862A2054
0902808	Replacement Insert for 1/2 inch V5852/V5862	V5852A2049 or V5862A2047
0902809	Replacement Insert for 1/2 inch V5852/V5862	V5852A2031 or V5862A2039
0902810	Replacement Insert for 1/2 inch V5852/V5862	V5852A2023 or V5862A2021
0902811	Replacement Insert for 1/2 inch V5852/V5862	V5852A2015 or V5862A2013
0902812	Replacement Insert for 1/2 inch V5852/V5862	V5852A2007 or V5862A2005
0902814	Replacement Insert for 3/4 inch V5852/V5862	V5852A2064 or V5862A2062
0902815	Replacement Insert for 3/4 inch V5852/V5862	V5852A2072 or V5862A2070
0902821	Replacement Insert for 1/2 inch V5853/V5863	V5853A2006 or V5863A2004
0902822	Replacement Insert for 1/2 inch V5853/V5863	V5853A2014 or V5863A2012
0902823	Replacement Insert for 1/2 inch V5853/V5863	V5853A2022 or V5863A2020
0902824	Replacement Insert for 1/2 inch V5853/V5863	V5853A2030 or V5863A2038
0902825	Replacement Insert for 1/2 inch V5853/V5863	V5853A2048 or V5863A2046
0902827	Replacement Insert for 3/4 inch V5853/V5863	V5853A1016 or V5853A2063 or V5863A1014 or V5863A2061
0903827	Replacement Insert for 1 inch V5862/V5863	V5862A3003 or V5862A3011 or V5862A3029 or V5863A3002 or V5863A3010 or V5863A3028
0903828	Replacement Insert for 1-1/4 inch V5862/V5863	V5862A3037 or V5863A3036
0903829	Replacement Insert for 1-1/2 inch V5862/V5863	V5862A3045 or V5863A3044

VB2 Series Two-way Actuated Ball Valve



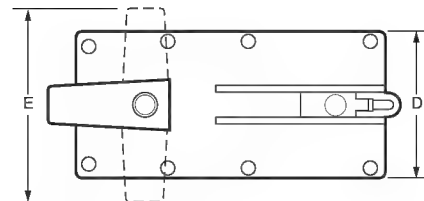
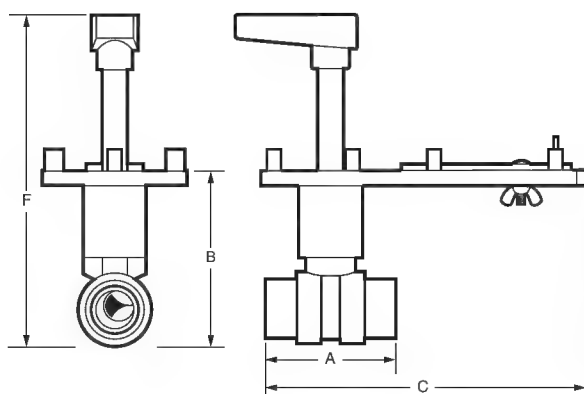
The VB2 Two-way Ball Valve assemblies with and without actuators are used in heating, ventilating, and air conditioning systems for two position or modulating control of hot and chilled water with glycol solutions up to 50%.

- Sizes from 1/2" to 2" with female NPT connections
- Equal Percentage flow characteristics
- Field configurable for normally open or normally closed fail-safe position
- Removable manual operating handle to control valve during installation or in an event of power failure
- ANSI Class IV leakage specification (.01% of Cv)
- Wide Cv choices 0.38 to 71.1
- Choice of four actuation control schemes: NSR Float, NSR Modulating, SR 24V 2-Pos., SR Mod./Float
- Valve ball and stem are Nickel Plated Brass or optional 316 Stainless Steel

Valve Type	Actuated Ball Valve
Pipe Connection	Female NPT
Body Pattern	two-way
Controlled Medium	Water w/ maximum of 50% Glycol
Flow Characteristics	Equal Percentage
Valve Action	Normally Open or Normally Closed (depending on actuator)
Temperature Range	-22 to 250 F
Pressure Ratings	Max- 360 psi

Leakage Rating	0.01% of Cv (ANSI Class IV)
Pipe Size	1/2 to 2 in
Stem Travel	90° Rotary
Material	Valve Body: Brass
	Ball: Nickel Plated Brass/Stainless Steel
	Seat: Teflon w/EPDM O-rings
	Stem: Brass
	Stem Packing: EPDM
	Flow Insert: Noryl™

Dimension Diagrams



SIZE	MODEL NO.	A	B	C	D	E	F
1/2 in.	VB2A	2-3/8	3-7/16	6-3/8	3	4	8-1/8
		2-5/8	3-11/16	6-1/2			8-5/16
3/4 in.	VB2B	2-3/8	3-7/16	6-7/16	3	4	8-1/8
		2-5/8	3-11/16	6-1/2			8-5/16
1 in.	VB2C	2-3/4	3-11/16	6-9/16	3	4	8-5/16
		3-1/16	3-15/16	6-3/4			8-11/16
		4-1/4	4-7/16	7-3/8			8-7/8
1-1/4 in.	VB2D	3	3-15/16	6-11/16	3	4	8-11/16
		3-3/16	4-7/16	6-13/16			9-1/16
1-1/2 in.	VB2E	3-7/16	3-15/16	6-15/16	3	4	9-1/16
		3-11/16	5-3/16	7-1/16			8-7/8
2 in.	VB2F	4	5-3/16	7-3/16	3	4	8-7/8
		4-7/16	5-3/4	7-7/16			10-1/2

M19475

VB3 Series Three-way Actuated Ball Valve



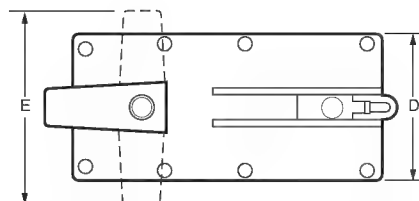
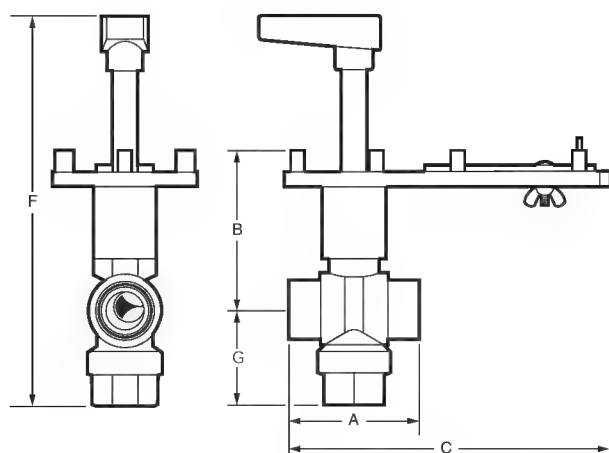
VB3 Three-Way Ball Valve assemblies with and without actuators are used in heating, ventilating, and air conditioning systems for two position or modulating control of hot and chilled water with glycol solutions up to 50%.

- Sizes from 1/2" to 2" with female NPT connections.
- Equal Percentage flow characteristics.
- Field configurable for normally open or normally closed fail-safe position.
- Removable manual operating handle to control valve during installation or in an event of power failure.
- ANSI Class IV leakage specification (.01% of Cv).
- Wide Cv choices 1.0 to 56.7.
- Choice of four actuation control schemes: NSR Float, NSR Modulating, SR 24V 2-Pos., SR Mod./Float.
- Valve is installed in a "tee" pattern, no extra piping or elbows required.

Valve Type	Actuated Ball Valve
Pipe Connection	Female NPT
Body Pattern	three-way
Controlled Medium	Water w/ maximum of 50% Glycol
Flow Characteristics	Equal Percentage (A-AB)
Valve Action	Mixing and Diverting
Temperature Range	-22 to 250 F
Pressure Ratings	Max: 360 psi
Leakage Rating	0.01% of Cv (ANSI Class IV)

Pipe Size	1/2 to 2 in
Stem Travel	90° Rotary
Material	Valve Body: Brass
	Ball: Nickel Plated Brass/Stainless Steel
	Seat: Teflon w/EPDM O-rings
	Stem: Brass
	Stem Packing: EPDM
	Flow Insert: Noryl™


Dimension Diagrams



SIZE	MODEL NO.	A	B	C	D	E	F	G
1/2 in.	VB3A	2-5/8	3-1/8	6-1/2	3	4	9	2
3/4 in.	VB3B	2-5/8	3-1/8	6-1/2	3	4	9	2
1 in.	VB3C	2-3/4	3-1/8	6-9/16	3	4	9	2-1/16
		3	3-1/4	6-3/4			9-1/2	2-7/16
		4-1/4	3-1/2	7-3/8			10-1/2	3-1/8
1-1/4 in.	VB3D	3	3-1/4	6-3/4	3	4	9-1/2	2-3/8
		3-3/16	3-1/2	6-13/16			9-15/16	2-5/8
1-1/2 in.	VB3E	3-7/16	3-1/2	6-15/16	3	4	10-1/16	2-3/4
		3-11/16	4	7-1/16			10-13/16	3
2 in.	VB3F	4	4	7-3/16	3	4	11	3-1/8
		4-7/16	4-5/16	7-7/16			11-3/4	3-5/8

M19474

Ball Valves

		Actuator Features	Actuator Model Number				Valve Only					
			ML6161B2024	ML7161A2008	MS8105A1008 (S0524-2POS)	MS7505A2008 (S05010)						
		24 Vac	X	X	X	X						
		2-position Control	X		X							
		Floating Control	X			X						
		2-10 Vdc Control		X		X						
		0-10 Vdc Control		X		X						
		4-20 mA Control		X		X						
		Manual Override	X	X	X	X						
		Conduit Connection			X	X						
		Spring Return			X	X						
Valve Size	Cv	Close-off, Differential Pressure (psi)	Nickel-Plated Brass Trim	Stainless Steel Trim	Nickel-Plated Brass Trim	Stainless Steel Trim	Nickel-Plated Brass Trim	Stainless Steel Trim	Nickel-Plated Brass Trim	Stainless Steel Trim	Nickel-Plated Brass Trim	Stainless Steel Trim
1/2 in.	1.0	50	VB3AABA	--	VB3AABB	--	VB3AABC	--	VB3AABD	--	VB3AABX	--
	2.4		VB3ABBA	--	VB3ABBB	--	VB3ABBC	--	VB3ABBBD	--	VB3ABBX	--
	4.3		VB3ACBA	--	VB3ACBB	--	VB3ACBC	--	VB3ACBD	--	VB3ACBX	--
	8*		VB3ADBA	--	VB3ADBB	--	VB3ADBC	--	VB3ADBBD	--	VB3ADBX	--
3/4 in.	2.4		VB3BABA	--	VB3BABB	--	VB3BABC	--	VB3BABD	--	VB3BABX	--
	3.8		VB3BBBA	--	VB3BBBB	--	VB3BBBC	--	VB3BBBD	--	VB3BBX	--
	12.6*		VB3BCBA	--	VB3BCBB	--	VB3BCBC	--	VB3BCBD	--	VB3BCBX	--
1 in.	8.6		VB3CABA	--	VB3CABB	--	VB3CABC	--	VB3CABD	--	VB3CABX	--
	10*		VB3CBBA	--	VB3CBBB	--	VB3CBBC	--	VB3CBBD	--	VB3CBX	--
	22.3*		VB3CCBA	--	VB3CCBB	--	VB3CCBC	--	VB3CCBD	--	VB3CCBX	--
	30.8*		VB3CDBA	--	VB3CDBB	--	VB3CDBC	--	VB3CDBD	--	VB3CDBX	--
1-1/4 in.	12.7	40	VB3DABA	--	VB3DABB	--	VB3DABC	--	VB3DABD	--	VB3DABX	--
	19.4*		VB3DBBA	--	VB3DBBB	--	VB3DBBC	--	VB3DBBD	--	VB3DBX	--
	34.1*		VB3DCBA	--	VB3DCBB	--	VB3DCBC	--	VB3DCBD	--	VB3DCBX	--
1-1/2 in.	13.4		VB3EABA	--	VB3EABB	--	VB3EABC	--	VB3EABD	--	VB3EABX	--
	23.5		VB3EBBA	--	VB3EBBB	--	VB3EBBC	--	VB3EBBD	--	VB3EBX	--
	32*		VB3ECBA	--	VB3ECBB	--	VB3ECBC	--	VB3ECBD	--	VB3ECBX	--
2 in.	23.9		VB3FABA	--	VB3FABB	--	VB3FABC	--	VB3FABD	--	VB3FABX	--
	38.2		VB3FBBA	--	VB3FBBB	--	VB3FBBC	--	VB3FBBD	--	VB3FBX	--
	56.7*		VB3FCBA	--	VB3FCBB	--	VB3FCBC	--	VB3FCBD	--	VB3FCBX	--

* Denotes full port valve with no flow control insert.

VB 2 - A C - B - D

Body Type

- 2-way
- 3-way

Valve Type

- VB - Valve, Ball

Pipe Size

- A - 1/2"
- B - 3/4"
- C - 1"
- D - 1-1/4"
- E - 1-1/2"
- F - 2"

Trim Material

- B - Brass
- S - Stainless Steel

Actuation

- X - No Actuator
- A - NSR, Floating
- B - NSR, Modulating
- C - SR, 2-Position, 24 Vac
- D - SR, Floating/Modulating

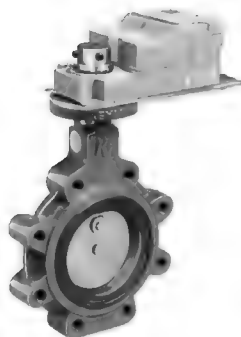
Cv Rating

3-Way	Cv			
Pipe Size	A	B	C	D
1/2"	1.0	2.4	4.3	8*
3/4"	2.4	3.8	12.6*	
1"	8.6	10*	22.3*	30.8
1-1/4"	12.7	19.4*	34.1*	
1-1/2"	13.4	23.5	32*	
2"	23.9	38.2	56.7*	

*Full port valve Does not include insert

M18949

VF52; VF53; VH52; VH53 Butterfly Valves



Resilient seat (VF) and high performance (VH) valve assemblies, in two-way (52 Series) and three-way (53 Series), provide control for HVAC system applications including chilled water, hot water, cooling tower water, thermal storage systems, and steam.

- 2 in. through 20 in. sizes.
- Two-way and three-way assemblies - all sizes.
- Electric and pneumatic actuation - all sizes.
- 2-position and modulating control - all sizes.
- Lug body (standard) or wafer body.
- Each valve assembly fully tested before shipping.
- All products manufactured in compliance with ISO 9001.

VF52, 53

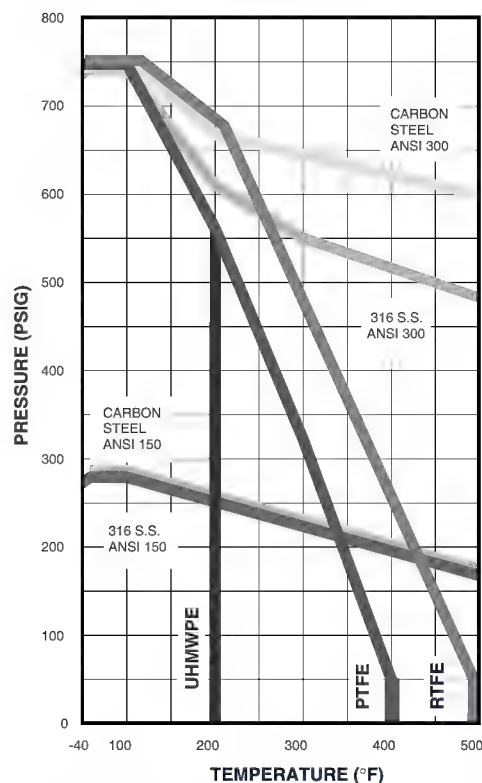
Valve Type	Butterfly
Pipe Connection	Flanged
Body Pattern	Lug (Standard) or Wafer
Pipe Connection	Flanged
Pipe Size	2 to 20 in.
Controlled Medium	Water w/ maximum of 50% Glycol
Temperature Range	Operating: -20 to 130F System: 32 to 212F
Humidity Rating	5 to 95%
Pressure Ratings	2-12 in- 250 psi 14-20 in- 150 psi System: 125 to 250 psi max
Material	Valve Body: Cast Iron Seat: EPDM Stem: 316SS Disc: Aluminum Bronze

VH52, 53

Valve Type	Butterfly
Pipe Connection	Flanged
Body Pattern	Lug (Standard) or Wafer
Leakage Rating	0.01% of Cv
Pipe Size	2-20 in.
Controlled Medium	Water w/ maximum of 50% Glycol
Temperature Range	Operating: -20 to 130F System: 32 to 450F
Humidity Rating	5 to 95%
Pressure Ratings	See Graph System: ANSI 150: 285 psi @ 100F ANSI 300: 740 psi @ 100f

Leakage Rating	0.01% of Cv
Material	Valve Body: Carbon Steel Seat: RTFE Stem: 17-4PH Disc: Stainless Steel
Approvals	Body: ANSI Body Class:150 or 300

VH Family Pressure-Temperature Ratings



M18275

Standard Close Off Ratings:

Valve Size in inches	Compatible Actuators	Valve ^a	Close-off Pressure (psi)	
			Full Cut	Under Cut
2 to 6	Electric DCA	222	—	100
	20 psi	222	200	—
2 to 8	20 psi	222	—	100
2 to 12	60 psi and electric	222	200	100
10 to 12	20 psi	AR2	—	50
14 to 20	60 psi and electric	AR2	150	50
			ANSI 150	ANSI 300
2 to 20	All	K-Lok® Valve ^b	285	740

^a Honeywell VF52 and VF53 Valves consist of an actuator and a Keystone Figure 222 or Figure AR2 Valve. Honeywell VH52 and VH53 Valves consist of an actuator and a Keystone K-Lok® Valve.

^b K-Lok is a registered trademark of Tyco International.

Butterfly Valves

VF52, VF53 Dimensions and Weight:

150 psi
(Figure AR2)

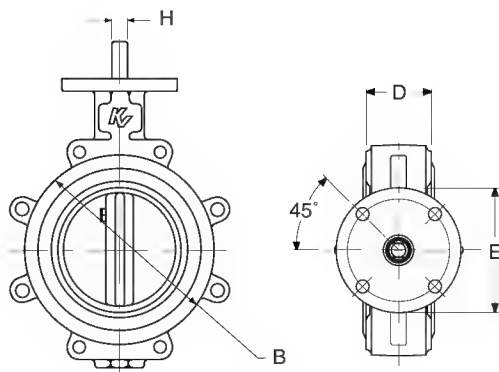


Figure 222* (250 psi) Dimensions in inches (mm)

Valve Size	A	B	C	D	Tap Lug Data		No. Bolts	Q	E	F	G	H
					Tap Size	Bolt Circle						
2	2.06 (52)	4.13 (105)	5.31 (135)	1.69 (43)	.625-11 UNC-2B	3.25 (83)	4	1.38 (35)	4 (102)	1.25 (32)	.56 (14)	.38 (10)
2.5	2.56 (64)	4.63 (118)	5.94 (150)	1.81 (46)	.625-11 UNC-2B	3.25 (83)	4	2.00 (51)	4 (102)	1.25 (32)	.56 (14)	.38 (10)
3	3.06 (77)	5.19 (132)	6.31 (160)	1.81 (46)	.625-11 UNC-2B	3.25 (83)	4	2.63 (67)	4 (102)	1.25 (32)	.56 (14)	.38 (10)
4	4.06 (103)	6.38 (162)	7.13 (181)	2.06 (52)	.625-11 UNC-2B	3.25 (83)	8	3.69 (93)	4 (102)	1.25 (32)	.63 (16)	.44 (11)
5	5.06 (128)	7.38 (188)	7.69 (195)	2.25 (56)	.750-10 UNC-2B	3.25 (83)	8	4.75 (120)	4 (102)	1.25 (32)	.75 (19)	.50 (13)
6	5.81 (147)	8.50 (216)	8.31 (210)	2.25 (56)	.750-10 UNC-2B	3.25 (83)	8	5.56 (141)	4 (102)	1.25 (32)	.75 (19)	.50 (13)
8	7.81 (198)	10.69 (272)	9.50 (241)	2.38 (60)	.750-10 UNC-2B	5.00 (127)	8	7.75 (196)	6 (152)	1.25 (32)	.88 (22)	.63 (16)
10	9.81 (249)	13.00 (330)	10.88 (275)	2.69 (68)	.875-9 UNC-2B	5.00 (127)	12	9.75 (247)	6 (152)	2.00 (51)	1.13 (29)	N/A
12	11.81 (300)	14.81 (376)	12.25 (311)	3.13 (78)	.875-9 UNC-2B	5.00 (127)	12	11.75 (298)	6 (152)	2.00 (51)	1.13 (29)	N/A

* Figure 222 valves are rated for 250 psi bi-directional service. Standard actuator sizing is based on 150 psi line pressure.

Figure AR2 (150 psi) Dimensions in inches (mm)

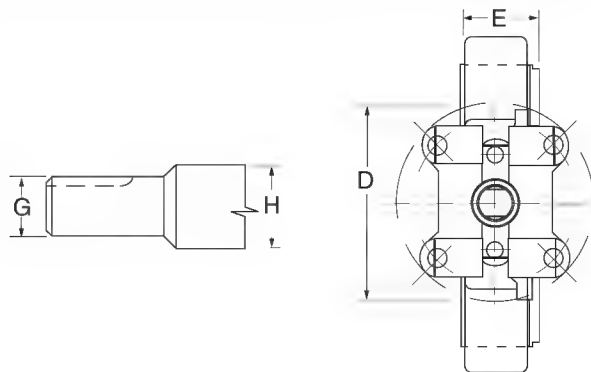
Valve Size	A	B	C	D	Tap Lug Data		No. Bolts	Q	E	F	G	H
					Tap Size	Bolt Circle						
4	4.00 (102)	6.38 (162)	7.00 (178)	2.00 (51)	.625-11 UNC-2B	7.50 (191)	8	3.44 (87)	4 (102)	1.25 (32)	.63 (16)	.44 (11)
5	5.00 (127)	7.38 (187)	7.50 (191)	2.13 (54)	.750-10 UNC-2B	8.50 (216)	8	4.54 (115)	4 (102)	1.25 (32)	.75 (19)	.50 (13)
6	5.75 (146)	8.50 (216)	8.00 (203)	2.13 (54)	.750-10 UNC-2B	9.50 (241)	8	5.35 (136)	4 (102)	1.25 (32)	.75 (19)	.50 (13)
8	7.75 (197)	10.69 (272)	9.50 (241)	2.50 (64)	.750-10 UNC-2B	11.75 (298)	8	7.36 (187)	6 (152)	1.25 (32)	.88 (22)	.63 (16)
10	9.75 (248)	13.00 (330)	10.75 (273)	2.50 (64)	.875-9 UNC-2B	14.25 (362)	12	9.46 (240)	6 (152)	2.00 (51)	1.13 (29)	N/A
12	11.75 (298)	14.81 (376)	12.25 (311)	3.00 (76)	.875-9 UNC-2B	17.00 (432)	12	11.40 (290)	6 (152)	2.00 (51)	1.13 (29)	N/A
14	13.25 (337)	16.88 (429)	12.00 (305)	3.00 (76)	1.000-8 N.C.	18.75 (476)	12	12.95 (329)	6 (152)	3.00 (76)	1.38 (35)	N/A
16	15.25 (387)	19.25 (489)	12.94 (329)	4.00 (102)	1.000-8 N.C.	21.25 (540)	16	14.78 (375)	6 (152)	3.02 (77)	1.63 (41)	N/A
18	17.25 (438)	21.50 (546)	14.50 (368)	4.25 (108)	1.125-7 N.C.	22.75 (578)	16	16.79 (426)	8 (203)	4.25 (108)	1.88 (48)	N/A
20	19.25 (489)	23.75 (603)	15.88 (403)	5.00 (127)	1.125-7 N.C.	25.00 (645)	20	18.64 (473)	8 (203)	4.25 (108)	1.88 (48)	N/A

NOTES: Dimensions and weights do not include mounting bracket and actuator.

AR2 valves are utilized for all assemblies 14-inch – 20-inch (150 psi) and undercut assemblies (50 psi) size 8-inch – 20-inch.

222 valves are utilized for all assemblies 2-inch—12-inch at 200 psi and undercut assemblies 2-inch—6-inch at 100 psi.

VH52, VH53 Dimensions and Weight, ANSI 150, 300 K-Lok Valves



ANSI Class 150 Figure 360/362 Dimensions (in inches)

Size	A	B	C	D	E	F	G	H	Q	Top Plate Drilling			Hole Dia.	Tapped Lug Data			Wt (lb)	Actuator Code
										DD or Keyway	Bolt Circle	No. Holes		No. Holes	Bolt Circle	Tap		
2	4-1/8	6	4-1/16	4	2-3/8	1-1/4	9/16	9/16	1-7/8	3/8	3-1/4	4	7/16	4	5-1/2	5/8-11UNC	13	BAB
2-1/2	4-1/8	6	4-1/16	4	1-7/8	1-1/4	9/16	9/16	2-3/8	3/8	3-1/4	4	7/16	4	5-1/2	5/8-11UNC	14	BAB
3	5	6-5/8	4-5/8	4	1-7/8	1-1/4	5/8	5/8	2-15/16	7/16*	3-1/4	4	7/16	4	6	5/8-11UNC	15	BAC
4	6-3/16	7-1/2	5-1/2	4	2-1/8	1-1/4	3/4	3/4	3-7/8	1/2	3-1/4	4	7/16	8	7-1/2	5/8-11UNC	26	BAD
5	7-1/4	7-9/16	5-9/16	4	2-1/4	1-1/4	3/4	3/4	4-13/16	1/2	3-1/4	4	7/16	8	8-1/2	3/4-10UNC	31	BAD
6	8-19/32	8-3/4	6-11/16	6	2-1/4	1-1/4	3/4	7/8	5-13/16	1/2	5	4	9/16	8	9 1/2	3/4-10UNC	40	CAD
6*	8-19/32	8-3/4	6-11/16	6	2-1/4	1-1/4	7/8	7/8	5-13/16	5/8	5	4	9/16	8	9 1/2	3/4-10UNC	41	CAE
8	10-5/8	10-1/8	8-1/16	6	2-1/2	2	1-1/8	1-1/8	7-5/8	1/4 x 1/4 x 1-5/8	5	4	9/16	8	11-3/4	3/4-10UNC	63	CAF
10	12-3/4	11-3/8	9 3/8	6	2-13/16	2	1-1/8	1-3/8	9 9/16	1/4 x 1/4 x 1-5/8	5	4	9/16	12	14-1/4	7/8-9UNC	106	CAF
10*	12-3/4	11-3/8	9 3/8	6	2-13/16	3	1-3/8	1-3/8	9 9/16	5/16 x 5/16 x 2-5/8	5	4	9/16	12	14-1/4	7/8-9UNC	107	CAG
12	14-3/4	13	10-9/16	8	3-3/16	3	1-3/8	1-1/2	11-3/8	5/16 x 5/16 x 2-5/8	6-1/2	4	13/16	12	17	7/8-9UNC	160	DAG
14	16-1/4	13-1/4	11-9/16	8	3-5/8	3	1-5/8	1-5/8	12-1/2	3/8 x 3/8 x 2-5/8	6-1/2	4	13/16	12	18-3/4	1-8UN	265	DAH
16	18-1/2	14-1/2	12-9/16	8	4	3	1-5/8	1-3/4	14-5/16	3/8 x 3/8 x 2-5/8	6-1/2	4	13/16	16	21-3/4	1-8UN	305	DAH
18	21	16	13-3/16	8	4-1/2	4-1/4	1-7/8	1-7/8	16-1/8	1/2 x 3/8 x 3-7/8	6-1/2	4	13/16	16	22-3/4	1-1/8-8UN	415	DAJ
20	23	17-7/16	15-1/16	8	5	4-1/4	2-1/4	2-1/4	17-15/16	1/2 x 3/8 x 3-7/8	6-1/2	4	13/16	20	25	1-1/8-8UN	500	DAK

ANSI Class 300 Figure 370/372 Dimensions (in inches)

Size	A	B	C	D	E	F	G	H	Q	Top Plate Drilling			Hole Dia.	Tapped Lug Data			Wt (lb)	Actuator Code
										DD or Keyway	Bolt Circle	No. Holes		No. Holes	Bolt Circle	Tap		
2	4-1/8	6	4-1/16	4	2-3/8	1-1/4	9/16	9/16	1-7/8	3/8	3-1/4	4	7/16	8	5-7/8	3/4-10UNC	17	BAB
2-1/2	4-1/8	6	4-1/16	4	1-7/8	1-1/4	9/16	9/16	2-3/8	3/8	3-1/4	4	7/16	8	5-7/8	3/4-10UNC	18	BAB
3	5	6-5/8	4-5/8	4	1-7/8	1-1/4	5/8	5/8	2-15/16	7/16	3-1/4	4	7/16	8	6-5/8	3/4-10UNC	20	BAC
4	6-3/16	7-1/2	5-1/2	4	2-1/8	1-1/4	3/4	3/4	3-7/8	1/2	3-1/4	4	7/16	8	7-7/8	3/4-10UNC	26	BAD
5	7-1/4	7-9/16	5-9/16	4	2-5/16	1-1/4	3/4	3/4	4-13/16	1/2	3-1/4	4	7/16	8	9 1/4	3/4-10UNC	31	BAD
6	8-19/32	8-3/4	6-11/16	6	2-5/16	1-1/4	7/8	7/8	5-13/16	5/8	5	4	9/16	12	10-5/8	3/4-10UNC	55	CAE
8	10-5/8	10-1/8	8-1/16	6	2-7/8	2	1-1/8	1-1/8	7-5/8	1/4 x 1/4 x 1-5/8	5	4	9/16	12	13	7/8-9UNC	80	CAF
10	12-3/4	11-3/8	9 3/8	6	3-1/4	3	1-3/8	1-3/8	9 9/16	5/16 x 5/16 x 2-5/8	5	4	9/16	16	15-1/4	1-8UN	137	CAG
12	14-3/4	13	10-9/16	8	3-5/8	3	1-3/8	1-1/2	11-3/8	5/16 x 5/16 x 2-5/8	6-1/2	4	13/16	16	17-3/4	1-1/8-8UN	185	DAG
14	16-1/4	14-3/8	12-1/4	8	4-5/8	4-1/4	1-7/8	1-7/8	12-1/2	1/2 x 3/8 x 4	6-1/2	4	13/16	20	20-1/4	1-1/8-8UN	340	DAJ
16	18-1/2	16	13-3/8	8	5-1/4	4-1/4	2-1/4	2-1/4	14-5/16	1/2 x 3/8 x 4	6-1/2	4	13/16	20	22-1/2	1-1/4-8UN	432	DAK
18	21	17	14-3/4	8	5-7/8	4-1/4	2-1/2	2-1/2	16-1/8	5/8 x 5/8 x 4	6-1/2	4	13/16	24	24-3/4	1-1/4-8UN	550	DBA
20	23	20-3/16	16-5/16	7-1/2	6-1/4	6-1/2	2-3/4	2-3/4	17-15/16	5/8 x 5/8 x 5-3/4	8	4	13/16	24	27	1-1/4-8UN	850	LAX

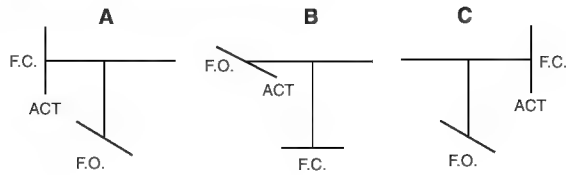
NOTE: Dimensions and weights do not include mounting bracket and actuator.

Butterfly Valves

Order Number Guide:

VF5	Resilient seat butterfly valve										Valve Type	
VH5	High performance K-Lok® butterfly valve											
	2	Two-way									Valve Assembly Type	
	3	Three-way										
		02	2 in.								Valve Size	
		25	2-1/2 to 20 in.									
		20	20 in.									
			F	Full cut disc - VF5 valve type only (see notes)							Disc/Close Off Pressure	
			U	Under cut disc - VF5 valve type only (see notes)								
			1	ANSI 150 - VH5 valve type only (see notes)								
			3	ANSI 300 - VH5 valve type only (see notes)								
				S2	Pneumatic spring return, 20 psi air (available valve sizes 2-12 inches)						Actuator Type	
				S6	Pneumatic spring return, 60 psi air (all valve sizes)							
				D6	Pneumatic double acting non-spring return, 60 psi air (all valve sizes)							
				E2	Electric non-spring return, floating. 120 Vac power (all valve sizes)							
				EM	Electric non-spring return, modulating 0-10 Vdc control, 120 Vac power (all valve sizes)							
				EP	Electric non-spring return, modulating, 4-20 mA control, 120 Vac (all valve sizes)							
				EK	Electric non-spring return, modulating, resistance control, 120 Vac power (all valve sizes)							
				H1	DCA - Electric non-spring return, floating control, 24 Vac power (available valve sizes 2-6 inches) (ML6194A1002)							
				H2	DCA - Electric non-spring return, modulating (2-10 Vdc/4-20 mA) control, 24 Vac power, (available valve sizes 2-6 inches) (ML7294A1009)							
				H3	DCA - Electric non-spring return, modulating (135 ohm) control, 24 Vac power, (available valve sizes 2-6 inches) (ML 9194A1009)							
				H4	DCA - Electric spring return, floating control, 24 Vac power, (available valve sizes 2-4 inches) (ML6195A1009)							
				H5	DCA - Electric spring return, modulating (2-10 Vdc/4-20 mA) control, 24 Vac power, (available valve sizes 2-4 inches) (ML 7295A1014)							
				H6	DCA - Electric spring return, 2-position control, 120 Vac power, (available valve sizes 2-4 inches) (ML4195A1001)							
				H7	DCA - Electric spring return, 2-position control, 24 Vac power, (available valve sizes 2-4 inches) (ML8195A1007)							
				L	Lug - Cast Iron (standard)						Valve Body Style	
				W	Wafer - Cast Iron (optional - nonstock item, non-standard delivery)							
					O	Spring return two-way assembly - normally open					Fail Position/ Assembly Configuration	
					C	Spring return two-way assembly - normally closed						
					N	Electric non-spring return two-way assembly - fail in place						
					A,B,C,D,E,F	Spring return three-way assembly - see three-way diagram						
					A,C,E	Non-Spring Return three-way assembly - see three-way diagram						
						P	Pneumatic positioner, 20 psi spring return actuator				Actuator Accessories/ Options	
						Q	Pneumatic positioner, 60 psi spring return actuator					
						R	Pneumatic positioner, 60 psi double acting actuator					
						F	Electro-pneumatic positioner, 60 psi spring return or double acting actuator					
						H	Integral auxiliary switches on DCA actuator ("C" model of DCA)					
						T	EP Valve 120 Vac, 20 psi spring return actuator					
						U	EP Valve 24 Vac, 20 psi spring return actuator					
						V	EP Valve 120 Vac, 60 psi spring return actuator					
						W	EP Valve 24 Vac, 60 psi spring return actuator					
						Y	EP Valve 120 Vac, 60 psi double acting actuator					
						Z	EP Valve 24 Vac, 60 psi double acting actuator					
						X	No accessories					
							S	Limit switch for pneumatic actuators				
							X	No optional limit switch (limit switches are standard on EM, EP, E2 electric actuators)				
								H	Heater (required for all electric modulating "EM" and "EP" actuators, optional for floating "E2")			
								X	No optional heater (heaters are not applicable for pneumatic actuators, or DCA's)			
									H	Handle for non-spring return DCA assemblies		
									X	No optional handle (Manual handle is standard on "EM", "E2", "EK", and "EP" actuators)		
VF5	2	02	F	S2	L	O	P	S	H	H	Example	

Three-way Butterfly Valve Configurations



1. For three-way valve assemblies with pneumatic spring return actuators 1 Port fail closed (F.C.), 1 port fail open (F.O.)

NOTES:

2. three-way assemblies with electric/pneumatic modulating actuators will fail to low signal upon loss of signal and last position upon power failure.
3. Actuator location indicated by "ACT" in above diagrams.
4. Options and accessories not shown in above part number sequence are "specials" and not available through Honeywell. "Specials" may be ordered by contacting your Honeywell Sales Rep.
5. When required, 2-12 inch valves with full cut disc can be provided with a 250 psi close-off rating (except with 20 psi actuator) as a "special". See note 4.

Selecting a Drive

Pick the right VFD for the application

Choice of drives

All drives are dimensioned using the same principle, i.e. the current required by the load. The selection of the drive is determined by the degree of over load capacity required and the ambient temperature.

Two types of overload conditions have been defined:

A. Low overload – 10% for 1 minute every 10 minutes, 150% starting torque, 40°C ambient temperature.

Typical applications include centrifugal fans and pumps as well as rotary compressors with slow variations in load.

B. High overload — 50% for 1 minute every 10 minutes, 200% starting torque, 50°C ambient temperature.

Typical applications include cranes, hoists, elevators and conveyors as well as others with rapidly changing load.

In addition to the rated currents for the low and high overloads, a two-second short term overload current has been allowed.

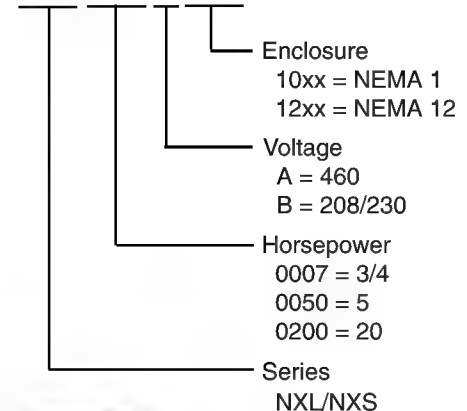
General Selection Tips

When selecting by Hp — and the drive is to be used with a motor with 8 poles or more — verify the current capacity of the drive is sufficient. The NX drives are suitable for multi-motor applications. The total value of the rated motor currents must then be less than the rated drive current.

If the motors are required to start on a running drive, the starting current of the largest motor must be added to the total value of the running currents.

Use the high over-load rating for multimotor applications as well as the use of an output choke if the total length of the motor cable exceeds 330 feet.

NXS0050A10xx



NXS Series



NXL series

NXS 380-500V

NEMA 1 Models	NEMA 12 Models	Motor shaft power (500V) and current.					Size	Dimensions WxHxD (in.)	Weight (lb)
		Low overload (VT)		High overload (CT)					
		P [Hp] (500V)	I (L)	P [Hp] (500V)	I (H)	I (max)			
NXS0015A1007	NXS0015A1205	1.5	3.3	1	2.2	3.3	FR4	5.4 x 11.5 x 7.5	11.0
NXS0020A1000	NXS0020A1208	2	4.3	1.5	3.3	5.0	FR4	5.4 x 11.5 x 7.5	11.0
NXS0030A1008	NXS0030A1206	3	5.6	2	4.3	6.5	FR4	5.4 x1 1.5 x 7.5	11.0
NXS0040A1006	NXS0040A1204	—	—	3	5.6	8.4	FR4	5.4 x 11.5 x 7.5	11.0
NXS0050A1003	NXS0050A1201	5	9	—	—	11.4	FR4	5.4 x 11.5 x 7.5	11.0
NXS0075A1004	NXS0075A1202	7.5	12	5	9	13.5	FR4	5.4 x 11.5 x 7.5	11.0
NXS0100A1003	NXS0100A1201	10	16	7.5	12	18	FR5	5.7 x 15.4 x 8.4	17.9
NXS0150A1002	NXS0150A1200	15	23	10	16	24	FR5	5.7 x 15.4 x 8.4	17.9
NXS0200A1002	NXS0200A1200	20	31	15	23	35	FR5	5.7 x 15.4 x 8.4	17.9
NXS0250A1001	NXS0250A1209	25	38	20	31	47	FR6	7.7 x 20.4 x 9.3	40.8
NXS0300A1001	NXS0300A1209	30	46	25	38	57	FR6	7.7 x 20.4 x 9.3	40.8
NXS0400A1000	NXS0400A1208	40	61	30	46	69	FR6	7.7 x 20.4 x 9.3	40.8
NXS0500A1009	NXS0500A1207	50	72	40	61	92	FR7	9.3 x 23.3 x 10.1	77.2
NXS0600A1008	NXS0600A1206	60	87	50	72	108	FR7	9.3 x 23.3 x 10.1	77.2
NXS0750A1006	NXS0750A1204	75	105	60	87	131	FR7	9.3 x 23.3 x 10.1	77.2
NXS1000A1002	NXS1000A1200	100	140	75	105	158	FR8	11.2 x 28.4 x 12.3	127.9
NXS1250A1009	NXS1250A1207	125	170	100	140	210	FR8	11.2 x 28.4 x 12.3	127.9

To select an integral bypass and drive combination:

- Replace the "A" with "J"

NXS 208-240V

NEMA 1	NEMA 12	Motor shaft power (500V) and current.					Size, Protection	Dimensions WxHxD (in.)	Weight (lb)
		Low overload (VT)		High overload (CT)					
		P [Hp] (230V)	I (L)	P [Hp] (230V)	I (H)	I (max)			
NXS0010B1000	NXS0010B1208	1	4.8	3/4	3.1	5.6	FR4, NEMA 1	5.4 x 11.5 x 7.5	11.0
NXS0015B1005	NXS0015B1203	1.5	6.6	1	4.8	7.2	FR4, NEMA 1	5.4 x 11.5 x 7.5	11.0
NXS0020B1008	NXS0020B1206	2	7.8	1.5	6.6	9.0	FR4, NEMA 1	5.4 x 11.5 x 7.5	11.0
NXS0030B1006	NXS0030B1204	3	11	2	7.8	11.7	FR4, NEMA 1	5.4 x 11.5 x 7.5	11.0
NXS0040B1004	NXS0040B1202	—	—	3	11	16.5	FR4, NEMA 1	5.4 x 11.5 x 7.5	11.0
NXS0050B1001	NXS0050B1209	5	17.5	—	—	18.8	FR5, NEMA 1	5.7 x 15.4 x 8.4	17.9
NXS0075B1002	NXS0075B1200	7.5	25	5	17.5	26.3	FR5, NEMA 1	5.7 x 15.4 x 8.4	17.9
NXS0100B1001	NXS0100B1209	10	31	7.5	25	37.5	FR5, NEMA 1	5.7 x 15.4 x 8.4	17.9
NXS0150B1000	NXS0150B1208	15	48	10	31	46	FR6, NEMA 1	7.7 x 20.4 x 9.3	40.8
NXS0200B1000	NXS0200B1208	20	61	15	48	72	FR6, NEMA 1	7.7 x 20.4 x 9.3	40.8
NXS0250B1009	NXS0250B1207	25	75	20	61	91	FR7, NEMA 1	9.3 x 23.3 x 10.1	77.2
NXS0300B1009	NXS0300B1207	30	88	25	75	112	FR7, NEMA 1	9.3 x 23.3 x 10.1	77.2
NXS0400B1008	NXS0400B1206	40	114	30	88	132	FR8, NEMA 1	11.2 x 28.4 x 12.3	127.9
NXS0500B1007	NXS0500B1205	50	143	40	114	171	FR8, NEMA 1	11.2 x 28.4 x 12.3	127.9
NXS0600B1006	NXS0600B1204	60	169	50	143	214	FR8, NEMA 1	11.2 x 28.4 x 12.3	127.9

To select an integral bypass and drive combination:

- For 208V applications, replace the “B” with “K”
- For 230V applications, replace the “B” with “S”

NXL 380-500V

Frequency Converter Type	Motor shaft power (500V) and current.					Size, Protection	Dimensions WxHxD (in.)	Weight (lb)
	Low overload (VT)		High overload (CT)					
	P [Hp] (500V)	I (L)	P [Hp] (500V)	I (H)	I (max)			
NXL0007A1006	0.75	1.9	0.5	1.3	2	MF2, Open Chassis	2.4 x 5.1 x 5.9	2.2
NXL0010A1001	1	2.4	0.75	1.9	2.9	MF2, Open Chassis	2.4 x 5.1 x 5.9	2.2
NXL0015A1006	1.5	3.3	1	2.4	3.6	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2
NXL0020A1009	2	4.3	1.5	3.3	5	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2
NXL0030A1007	3	5.4	2	4.3	6.5	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2

NXL 208-240V

Frequency Converter Type	Motor shaft power (500V) and current.					Size, Protection	Dimensions WxHxD (in.)	Weight (lb)
	Low overload (VT)		High overload (CT)					
	P [Hp] (240V)	I (L)	P [Hp] (230V)	I (H)	I (max)			
NXL0005B1006	0.5	2.4	—	—	2.6	MF2, Open Chassis	2.4 x 5.1 x 5.9	2.2
NXL0007B1001	0.75	3.7	0.5	2.8	4.2	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2
NXL0010B1009	1	4.8	0.75	3.7	5.6	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2
NXL0015B1004	1.5	6.6	1	4.8	7.2	MF3, Open Chassis	3.3 x 7.3 x 6.9	4.2

NXL Variable Frequency Drives



Variable Frequency Drives (VFD) accept a control input and then output tailored PWM control signal to operate fans, pumps, etc. with maximum efficiency. The VFD can be field-programmed without any extra devices or computer connections.

- Seven configurable applications built in.
- Easy commissioning through software or control panel.
- Devices can be wall-mounted or panel-mounted.
- Eleven protective functions (see Form 63-2599, Users Manual, Technical Data sections).
- Compact Size.
- Insulated gate bi-polar transistor (IGBT) technology.

Accuracy: 0 - 3000 sec

Deceleration Time: 0 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Continuous Output Current: overload 1.5 x High overload current (1min/10min)

overload 1.1 x Low overload current (1min/10min)

Relay Output: 24 Vdc/8A

125 Vdc/0.4A

250 Vac/8A

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Auxiliary Voltage: 24V, +/- 15%, max 250 mA

Reference Output Voltage: +10V, +3%, max 10mA

Starting Current: 2 x high overload current, 2secs every 2.0 secs

Starting Torque: 200% High

150% Low

Frequency: 0 Hz to 320 Hz

Ambient Operating Temperature: High Overload 14 to 122

Low Overload 14 to 104

(High Overload -10 to 50) (Low Overload -10 to 40)

Type of RFI Filter: No filter

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXL0005B1006	2.4 width x 5.1 height x 5.9 depth	60 mm width, 130 mm height, 150 mm depth	.5 HP	200 Vac, 240 Vac	2.4	Open Chassis	2.2
NXL0007B1004	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	.75 HP	200 Vac, 240 Vac	3.7	Open Chassis	4.19
NXL0010B1009	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	1 HP	200 Vac, 240 Vac	4.8	Open Chassis	4.19
NXL0015B1004	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	1.5 HP	200 Vac, 240 Vac	6.6	Open Chassis	4.19
NXL0007A1006	2.4 width x 5.1 height x 5.9 depth	60 mm width, 130 mm height, 150 mm depth	.75 HP	440 Vac, 500 Vac	1.9	Open Chassis	2.2
NXL0010A1001	2.4 width x 5.1 height x 5.9 depth	60 mm width, 130 mm height, 150 mm depth	1 HP	440 Vac, 500 Vac	2.4	Open Chassis	2.2
NXL0015A1006	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	1.5 HP	440 Vac, 500 Vac	3.3	Open Chassis	4.19
NXL0020A1009	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	2 HP	440 Vac, 500 Vac	4.3	Open Chassis	4.19
NXL0030A1007	3.3 width x 7.3 height x 6.9 depth	84 mm width, 184 mm height, 174 mm depth	3 HP	440 Vac, 500 Vac	5.4	Open Chassis	4.2

NXS Variable Frequency Drives



Variable Frequency Drives (VFD) accept a control input and then output tailored PWM control signal to operate fans, pumps, etc. with maximum efficiency. The VFD can be field-programmed without any extra devices or computer connections.

- Seven configurable applications built in.
- Easy commissioning through software or control panel.
- Devices can be wall-mounted or panel-mounted.
- Eleven protective functions (see Form 63-2600, Users Manual, Technical Data sections).
- Compact Size.
- Insulated gate bi-polar transistor (IGBT) technology.

Accuracy: 0 - 3000 sec

Deceleration Time: 0 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Continuous Output Current: overload 1.5 x High overload current (1min/10min)

overload 1.1 x Low overload current (1min/10min)

Digital Output: 50 mA/48v open collector

Relay Output: 24 Vdc/8A

125 Vdc/0.4A

250 Vac/8A

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Auxiliary Voltage: 24V, +/- 15%, max 250 mA

Reference Output Voltage: +10V, +3%, max 10mA

Starting Current: 2 x high overload current, 2secs every 2.0 secs

Starting Torque: 200% High

150% Low

Frequency: 0 Hz to 320 Hz

Ambient Operating Temperature: High Overload 14 to 122

Low Overload 14 to 104

(High Overload -10 to 50) (Low Overload -10 to 40)

Type of RFI Filter: Industrial filter

200-240 Volt

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, I _{vt} (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0010B1000	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1 HP	200 to 240 Vac	6.6	NEMA 1	11 lb
NXS0015B1005	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1.5 HP	200 to 240 Vac	7.8	NEMA 1	11 lb
NXS0020B1008	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	2 HP	200 to 240 Vac	11	NEMA 1	11 lb
NXS0030B1006	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	3 HP	200 to 240 Vac	12.5	NEMA 1	11 lb
NXS0040B1004	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	4 HP	200 to 240 Vac	-----	NEMA 1	17.9
NXS0050B1001	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	5 HP	200 to 240 Vac	25	NEMA 1	17.9
NXS0075B1002	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	7.5 HP	200 to 240 Vac	31	NEMA 1	17.9
NXS0100B1001	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	10 HP	200 to 240 Vac	48	NEMA 1	40.8
NXS0150B1000	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	15 HP	200 to 240 Vac	61	NEMA 1	40.8
NXS0200B1000	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	20 HP	200 to 240 Vac	75	NEMA 1	77.2
NXS0250B1009	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	25 HP	200 to 240 Vac	88	NEMA 1	77.2
NXS0300B1009	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	30 HP	200 to 240 Vac	114	NEMA 1	77.2

VFD—General Purpose

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0400B1008	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	40 HP	200 to 240 Vac	143	NEMA 1	127.9
NXS0010B1208	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1 HP	200 to 240 Vac	6.6	NEMA 12	11 lb
NXS0015B1203	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1.5 HP	200 to 240 Vac	7.8	NEMA 12	11 lb
NXS0020B1206	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	2 HP	200 to 240 Vac	11	NEMA 12	11 lb
NXS0040B1202	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	4 HP	200 to 240 Vac	----	NEMA 12	17.9
NXS0050B1209	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	5 HP	200 to 240 Vac	25	NEMA 12	17.9
NXS0075B1200	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	7.5 HP	200 to 240 Vac	31	NEMA 12	17.9
NXS0100B1209	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	10 HP	200 to 240 Vac	48	NEMA 12	40.8
NXS0150B1208	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	15 HP	200 to 240 Vac	61	NEMA 12	40.8
NXS0200B1208	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	20 HP	200 to 240 Vac	75	NEMA 12	77.2

460 Volts

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0015A1007	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1.5 HP	380 to 500 Vac	3.3	NEMA 1	11 lb
NXS0020A1000	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	2 HP	380 to 500 Vac	4.3	NEMA 1	11 lb
NXS0030A1008	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	3 HP	380 to 500 Vac	5.6	NEMA 1	11 lb
NXS0040A1006	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	4 HP	380 to 500 Vac	----	NEMA 1	11 lb
NXS0050A1003	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	5 HP	380 to 500 Vac	9	NEMA 1	11 lb
NXS0075A1004	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	7.5 HP	380 to 500 Vac	12	NEMA 1	11 lb
NXS0100A1003	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	10 HP	380 to 500 Vac	16	NEMA 1	17.9
NXS0150A1002	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	15 HP	380 to 500 Vac	23	NEMA 1	17.9
NXS0200A1002	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	20 HP	380 to 500 Vac	31	NEMA 1	17.9
NXS0250A1001	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	25 HP	380 to 500 Vac	38	NEMA 1	40.8
NXS0300A1001	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	30 HP	380 to 500 Vac	46	NEMA 1	40.8
NXS0400A1000	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	40 HP	380 to 500 Vac	61	NEMA 1	40.8
NXS0500A1009	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	50 HP	380 to 500 Vac	72	NEMA 1	77.2
NXS0600A1008	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	60 HP	380 to 500 Vac	87	NEMA 1	77.2
NXS0750A1006	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	75 HP	380 to 500 Vac	105	NEMA 1	77.2
NXS1000A1002	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	100 HP	380 to 500 Vac	140	NEMA 1	127.9
NXS1250A1009	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	125 HP	380 to 500 Vac	170	NEMA 1	127.9

VFD—General Purpose

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS1500A1007	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	150 HP	380 to 500 Vac	205	NEMA 1	127.9
NXS1750A1004	18.9 width x 45.3 height x 14.3 depth	480 mm width, 1150 mm height, 362 mm depth	175 HP	380 to 500 Vac	261	NEMA 1	321.9
NXS2000A1000	18.9 width x 45.3 height x 14.3 depth	480 mm width, 1150 mm height, 362 mm depth	200 HP	380 to 500 Vac	300	NEMA 1	321.9
NXS0015A1205	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	1.5 HP	380 to 500 Vac	3.3	NEMA 12	11 lb
NXS0020A1208	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	2 HP	380 to 500 Vac	4.3	NEMA 12	11 lb
NXS0030A1206	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	3 HP	380 to 500 Vac	5.6	NEMA 12	11 lb
NXS0030B1204	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	3 HP	380 to 500 Vac	12.5	NEMA 12	11 lb
NXS0040A1204	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	4 HP	380 to 500 Vac	—	NEMA 12	11 lb
NXS0050A1201	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	5 HP	380 to 500 Vac	9	NEMA 12	11 lb
NXS0075A1202	5.4 width x 11.5 height x 7.5 depth	128 mm width, 292 mm height, 190 mm depth	7.5 HP	380 to 500 Vac	12	NEMA 12	11 lb
NXS0100A1201	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	10 HP	380 to 500 Vac	16	NEMA 12	17.9
NXS0150A1200	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	15 HP	380 to 500 Vac	23	NEMA 12	17.9
NXS0200A1200	5.7 width x 15.4 height x 8.4 depth	144 mm width, 389 mm height, 214 mm depth	20 HP	380 to 500 Vac	31	NEMA 12	17.9
NXS0250A1209	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	25 HP	380 to 500 Vac	38	NEMA 12	40.8
NXS0300A1209	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	30 HP	380 to 500 Vac	46	NEMA 12	40.8
NXS0400A1208	7.7 width x 20.4 height x 9.3 depth	195 mm width, 519 mm height, 237 mm depth	40 HP	380 to 500 Vac	61	NEMA 12	40.8
NXS0500A1207	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	50 HP	380 to 500 Vac	72	NEMA 12	77.2
NXS0600A1206	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	60 HP	380 to 500 Vac	87	NEMA 12	77.2
NXS0750A1204	9.3 width x 23.3 height x 10.1 depth	237 mm width, 591 mm height, 257 mm depth	75 HP	380 to 500 Vac	105	NEMA 12	77.2
NXS1000A1200	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	100 HP	380 to 500 Vac	140	NEMA 12	127.9
NXS1250A1207	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	125 HP	380 to 500 Vac	170	NEMA 12	127.9
NXS1500A1205	11.2 width x 28.4 height x 12.3 depth	285 mm width, 721 mm height, 312 mm depth	150 HP	380 to 500 Vac	205	NEMA 12	127.9
NXS1750A1205	18.9 width x 45.3 height x 14.3 depth	480 mm width, 1151 mm height, 313 mm depth	175 HP	380 to 500 Vac	261	NEMA 12	321.9

VFD—General Purpose

NXS Variable Frequency Drives with bypass



Variable Frequency Drives (VFD) accept a control input and then output tailored PWM control signal to operate fans, pumps, etc. with maximum efficiency. The VFD can be field-programmed without any extra devices or computer connections.

- Seven configurable applications built in.
- Easy commissioning through software or control panel.
- Devices can be wall-mounted or panel-mounted.
- Eleven protective functions (see Form 63-2600, Users Manual, Technical Data sections).
- Compact Size.
- Insulated gate bi-polar transistor (IGBT) technology.

Accuracy: 0 - 3000 sec

Deceleration Time: 0 - 3000 sec

Analog Current Input: 0 (4) - 20 mA, 250 ohm differential

Analog Current Output: 0 (4) - 20 mA, max 500 ohm

Continuous Output Current: overload 1.5 x High overload current (1min/10min)

overload 1.1 x Low overload current (1min/10min)

Digital Output: 50 mA/48v open collector

Relay Output: 24 Vdc/8A

125 Vdc/0.4A

250 Vac/8A

Analog Voltage Input: 0 - 10 Vdc, 200K ohm

Auxiliary Voltage: 24V, +/- 15%, max 250 mA

Reference Output Voltage: +10V, +3%, max 10mA

Starting Current: 2 x high overload current, 2secs every 2.0 secs

Starting Torque: 200% High

150% Low

Frequency: 0 Hz to 320 Hz

Ambient Operating Temperature: High Overload 14 to 122

Low Overload 14 to 104

(High Overload -10 to 50) (Low Overload -10 to 40)

Type of RFI Filter: Industrial filter

208 Volts

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, I _{vt} (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0010K1000	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1 HP	200 Vac 208 Vac	6.6	NEMA 1	65
NXS0015K1005	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1.5 HP	208 Vac	7.8	NEMA 1	65
NXS0020K1008	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	2 HP	208 Vac	11	NEMA 1	65
NXS0030K1006	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	3 HP	208 Vac	12.5	NEMA 1	68
NXS0040K1004	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	4 HP	208 Vac	—	NEMA 1	68
NXS0050K1001	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	5 HP	208 Vac	25	NEMA 1	70
NXS0075K1002	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	7.5 HP	208 Vac	31	NEMA 1	70
NXS0100K1001	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	10 HP	208 Vac	48	NEMA 1	98
NXS0150K1000	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	15 HP	208 Vac	61	NEMA 1	98
NXS0200K1000	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	20 HP	208 Vac	75	NEMA 1	150

VFD—General Purpose

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0250K1009	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	25 HP	208 Vac	88	NEMA 1	150
NXS0300K1009	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	30 HP	208 Vac	114	NEMA 1	150
NXS0400K1008	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	208 Vac	143	NEMA 1	150
NXS0010K1208	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1 HP	200 Vac 208 Vac	6.6	NEMA 12	65
NXS0015K1203	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1.5 HP	208 Vac	7.8	NEMA 12	65
NXS0020K1206	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	2 HP	208 Vac	11	NEMA 12	65
NXS0030K1204	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	3 HP	208 Vac	12.5	NEMA 12	68
NXS0040K1202	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	4 HP	208 Vac	—	NEMA 12	68
NXS0050K1209	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	5 HP	208 Vac	25	NEMA 12	70
NXS0075K1200	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	7.5 HP	208 Vac	31	NEMA 12	70
NXS0100K1209	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	10 HP	208 Vac	48	NEMA 12	98 lb
NXS0150K1208	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	15 HP	208 Vac	61	NEMA 12	98 lb
NXS0200K1208	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	20 HP	208 Vac	75	NEMA 12	150
NXS0250K1207	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	25 HP	208 Vac	88	NEMA 12	150
NXS0300K1207	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	30 HP	208 Vac	114	NEMA 12	150
NXS0400K1206	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	208 Vac	143	NEMA 12	150

230 Volts

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0010S1000	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1 HP	230 Vac	6.6	NEMA 1	65
NXS0015S1005	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1.5 HP	230 Vac	7.8	NEMA 1	65
NXS0020S1008	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	2 HP	230 Vac	11	NEMA 1	65
NXS0030S1006	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	3 HP	230 Vac	12.5	NEMA 1	68
NXS0040S1004	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	4 HP	230 Vac	—	NEMA 1	68
NXS0050S1001	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	5 HP	230 Vac	25	NEMA 1	70
NXS0075S1002	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	7.5 HP	230 Vac	31	NEMA 1	70
NXS0100S1001	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	10 HP	230 Vac	48	NEMA 1	98 lb
NXS0150S1000	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	15 HP	230 Vac	61	NEMA 1	98 lb
NXS0200S1000	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	20 HP	230 Vac	75	NEMA 1	150
NXS0250S1009	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	25 HP	230 Vac	88	NEMA 1	150

VFD—General Purpose

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0300S1009	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	30 HP	230 Vac	114	NEMA 1	150
NXS0400S1008	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	230 Vac	143	NEMA 1	150
NXS0010S1208	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1 HP	230 Vac	6.6	NEMA 12	65
NXS0015S1203	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	1.5 HP	230 Vac	7.8	NEMA 12	65
NXS0020S1206	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	2 HP	230 Vac	11	NEMA 12	65
NXS0030S1204	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	3 HP	230 Vac	12.5	NEMA 12	68
NXS0040S1202	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	4 HP	230 Vac	—	NEMA 12	68
NXS0050S1209	16 width x 33.5 height x 7 depth	406 mm width, 850 mm height, 178 mm depth	5 HP	230 Vac	25	NEMA 12	70
NXS0075S1200	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	7.5 HP	230 Vac	31	NEMA 12	70
NXS0100S1209	20 width x 41.5 height x 9 depth	508 mm width, 1054 mm height, 229 mm depth	10 HP	230 Vac	48	NEMA 12	98 lb
NXS0150S1208	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	15 HP	230 Vac	61	NEMA 12	98 lb
NXS0200S1208	24 width x 46.5 height x 9 depth	610 mm wide, 1181 mm high, 229 mm deep	20 HP	230 Vac	75	NEMA 12	150
NXS0250S1207	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	25 HP	230 Vac	88	NEMA 12	150
NXS0300S1207	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	30 HP	230 Vac	114	NEMA 12	150
NXS0400S1206	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	230 Vac	143	NEMA 12	150

460 Volts

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0015J1007	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	1.5 HP	460 Vac	3.3	NEMA 1	65
NXS0020J1000	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	2 HP	460 Vac	4.3	NEMA 1	65
NXS0030J1008	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	3 HP	460 Vac	5.6	NEMA 1	65
NXS0040J1006	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	4 HP	460 Vac	—	NEMA 1	65
NXS0050J1003	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	5 HP	460 Vac	9	NEMA 1	68
NXS0075J1004	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	7.5 HP	460 Vac	12	NEMA 1	68
NXS0100J1003	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	10 HP	460 Vac	16	NEMA 1	70
NXS0150J1002	16 width x 37.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	15 HP	460 Vac	23	NEMA 1	70
NXS0200J1002	20 width x 41.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	20 HP	460 Vac	31	NEMA 1	98 lb
NXS0250J1001	20 width x 41.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	25 HP	460 Vac	38	NEMA 1	98 lb
NXS0300J1001	20 width x 46.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	30 HP	460 Vac	46	NEMA 1	98 lb
NXS0400J1000	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	460 Vac	61	NEMA 1	150

VFD—General Purpose

Product Number	Dimensions, Approximate		Horsepower	Voltage (Vac)	Amp Rating, lvt (A)	Type of Enclosure	Weight (lb)
	(inch)	(mm)					
NXS0500J1009	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	50 HP	460 Vac	72	NEMA 1	150
NXS0600J1008	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	60 HP	460 Vac	87	NEMA 1	150
NXS0750J1006	tbd	tbd	75 HP	460 Vac	105	NEMA 1	tbd
NXS1000J1002	tbd	tbd	100 HP	460 Vac	140	NEMA 1	tbd
NXS1250J1009	tbd	tbd	125 HP	460 Vac	170	NEMA 1	tbd
NXS1500J1007	tbd	tbd	150 HP	460 Vac	205	NEMA 1	tbd
NXS2000J1000	tbd	tbd	200 HP	460 Vac	300	NEMA 1	tbd
NXS0015J1205	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	1.5 HP	460 Vac	3.3	NEMA 12	65
NXS0020J1208	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	2 HP	460 Vac	4.3	NEMA 12	65
NXS0030J1206	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	3 HP	460 Vac	5.6	NEMA 12	65
NXS0040J1204	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	4 HP	460 Vac	—	NEMA 12	65
NXS0050J1201	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	5 HP	460 Vac	9	NEMA 12	68
NXS0075J1202	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	7.5 HP	460 Vac	12	NEMA 12	68
NXS0100J1201	16 width x 33.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	10 HP	460 Vac	16	NEMA 12	70
NXS0150J1200	16 width x 37.5 height x 7 depth	406 mm width, 953 mm height, 178 mm depth	15 HP	460 Vac	23	NEMA 12	70
NXS0200J1200	20 width x 41.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	20 HP	460 Vac	31	NEMA 12	98 lb
NXS0250J1209	20 width x 41.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	25 HP	460 Vac	38	NEMA 12	98 lb
NXS0300J1209	20 width x 46.5 height x 9 depth	508 mm width, 1181 mm height, 229 mm depth	30 HP	460 Vac	46	NEMA 12	98 lb
NXS0400J1208	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	40 HP	460 Vac	61	NEMA 12	150
NXS0500J1207	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	50 HP	460 Vac	72	NEMA 12	150
NXS0600J1206	24 width x 49.5 height x 9 depth	610 mm width, 1257 mm height, 229 mm depth	60 HP	460 Vac	87	NEMA 12	150
NXS0750J1204	tbd	tbd	75 HP	460 Vac	105	NEMA 12	tbd
NXS1000J1200	tbd	tbd	100 HP	460 Vac	140	NEMA 12	tbd
NXS1250J1207	tbd	tbd	125 HP	460 Vac	170	NEMA 12	tbd
NXS1500J1205	tbd	tbd	150 HP	460 Vac	205	NEMA 12	tbd

VFD—Accessories

Variable Frequency Drive Accessories

OS Number	Description	Used With
32006627-001	RFI Filter, up to 3 HP	NXL
32006628-001	Panel Mount Kit, NEMA12, 6 ft	NXS
32006629-001	Display, blank	NXS
32006629-002	Display, alphanumeric	NXS
32006629-003	Display, seven segment	NXL
32006630-001	Communication Card, LONBUS	NXS/NXL
32006630-002	Communication Card, MODBUS	NXS/NXL
32006630-003	I/O Expander, two-relay (NO/NC)	NXS/NXL
32006630-004	I/O Expander, programmable, six DI/DO	NXS/NXL
32006630-005	I/O Expander, six DI, one DO, two AI, one AO	NXS/NXL
32006630-006	I/O Expander, one RO (NO/NC), one RO (NO)	NXS/NXL
32006630-007	I/O Expander, three RO (NO)	NXS/NXL
32006630-008	I/O Expander, one AI (mA), two AO (mA)	NXS/NXL
32006662-001	Demo Case	NXL
32006662-002	Demo Case	NXS

Variable Frequency Drive Replacement Parts

OS Number	Description	Used With
32006803-001	Replacement Control Module	NXS
32006803-002	Replacement Fan, up to 7.5 HP	NXS
32006803-003	Replacement Fan, 10 to 20 HP	NXS
32006803-004	Replacement Fan, 25 to 40 HP	NXS
32006803-005	Replacement Fan, 50 to 75 HP	NXS
32006803-006	Replacement Fan, 100 to 150 HP	NXS
32006803-007	Replacement Power Module, 1.5 HP	NXS
32006803-008	Replacement Power Module, 2 HP	NXS
32006803-009	Replacement Power Module, 3 HP	NXS
32006803-010	Replacement Power Module, 4 HP	NXS
32006803-011	Replacement Power Module, 5 HP	NXS
32006803-012	Replacement Power Module, 7.5 HP	NXS
32006803-013	Replacement Power Module, 10 HP	NXS
32006803-014	Replacement Power Module, 15 HP	NXS
32006803-015	Replacement Power Module, 20 HP	NXS
32006803-016	Replacement Power Module, 25 HP	NXS
32006803-017	Replacement Power Module, 30 HP	NXS
32006803-018	Replacement Power Module, 40 HP	NXS
32006803-019	Replacement Power Module, 50 HP	NXS
32006803-020	Replacement Power Module, 60 HP	NXS
32006803-021	Replacement Power Module, 75 HP	NXS
32006803-022	Replacement Power Module, 100 HP	NXS
32006803-023	Replacement Power Module, 125 HP	NXS
32006803-024	Replacement Power Module, 150 HP	NXS

Pneumatic Control Products

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Pneumatic Damper Actuator Torque Ratings

Pneumatic Damper Actuator Torque Ratings

Most dampers operate through a 90-degree arc. The amount of torque that a pneumatic actuator can deliver to the damper shaft may be calculated from the net force delivered and the length of stroke of the actuator using the following equations:

$$T_R = \frac{F_R \times S}{2}$$

$$T_E = \frac{F_E \times S}{2}$$

$$T_M = 1.5 \times A \times 0.707S$$

T_R = Torque with actuator shaft retracted.

T_E = Torque with actuator shaft extended.

T_M = Midstroke torque.

F_R = Force exerted by actuator with shaft retracted.

F_E = Force exerted by actuator with shaft extended.

A = Effective area of actuator diaphragm.

S = Actuator stroke.

The midstroke is significant only for modulating service and is based on the premise that an input pressure change no greater than 1.5 psi (10 kPa) should cause the actuator to reposition the damper.

TORQUE (LB-IN.) DELIVERED TO A 90-DEGREE STROKE DAMPER SHAFT:

Actuator	Spring Range Psi (kPa)	Stroke in. (mm)	Delivered Torque Lbf-In. (N•m)				
			Shaft Retracted	Midstroke ^a	Shaft Extended		
					13 psi (90 kPa) main	18 psi (129 kPa) main	20 psi (138 kPa) main
MP909D	3-8 (21-55)	2-3/8 (60)	10.7 (1.209)	7.6 (0.859)	17.9 (2.023)	35.7 (4.034)	42.8 (4.836)
	5-10 (34-70)	2-3/8 (60)	17.9 (1.98)	7.6 (0.859)	10.7 (1.209)	28.6 (3.232)	35.7 (4.034)
	8-13 55-90)	2-3/8 (60)	28.6 (3.232)	7.6 (0.859)	0 (0)	17.9 (2.023)	25.0 (2.825)
	5-10 (34-70)	3 (76)	22.5 (2.543)	9.5 (1.974)	13.5 (1.526)	36 (4.008)	45 (5.085)
MP909E	2.5-6.5 (17-45)	3.1 (79)	25.6 (2.893)	22 (2.486)	66.5 (7.515)	118 (13.33)	138 (15.59)
	3-13 (21-90)	4 (101)	39.6 (4.475)	28 (3.164)	0 (0)	66 (7.058)	92.4 (10.44)
	5-10 (34-70)	4 (101)	66 (7.458)	28 (3.164)	39.6 (4.475)	105.6 (11.93)	132 (14.92)
	5-10 (34-70)	3.1 (79)	51.2 (5.786)	22 (2.486)	30.7 (3.469)	81.8 (9.243)	102 (11.53)
	9-13 (62-90)	3.1 (79)	92.1 (10.41)	22 (2.486)	0 (0)	51.2 (5.786)	71.7 (8.102)
MP909H	9-13 (62-90) plus positioner	3.1 (79)	92.1 (10.41)	b	0 (0)	66 (7.1)	92.4 (10.44)
MP918A	8-13 (55-90) plus positioner	3-1/2 (89)	333 (37.63)	b	0 (0)	208 (23.5)	292 (33)
MP918B	3-7 (21-34)	3-1/2 (89)	125 (14.3)	88 (9.944)	250 (28.25)	458 (51.53)	541 (61.3)
	3-13 (21-90)	3-1/2 (89)	125 (14.3)	88 (9.944)	0 (0)	208 (23.5)	292 (33)
	5-10 (34-70)	3-1/2 (89)	208 (23.5)	88 (9.944)	125 (14.3)	333 (37.63)	416 (47.01)
	8-13 (55-90)	3-1/2 (89)	333 (37.63)	88 (9.944)	0 (0)	208 (23.5)	292 (33)

^a Torque in this column is for modulating service only.

^b The lesser of retracted or extended shaft torque.

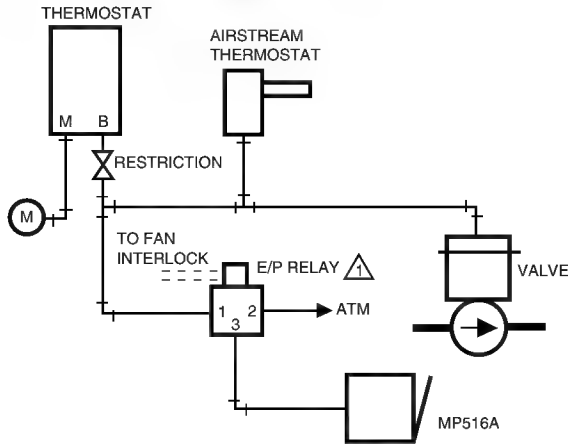
MP516 Pneumatic Unit Ventilator Damper Actuator



Used to control the damper on unit ventilators. Can be adapted to various unit ventilator control cycles.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell unit ventilator damper actuators.

- Constructed of strong zinc die castings.
- Hesitation feature available for unit ventilator cycles requiring a minimum percentage of outdoor air.



MAY BE SURFACE MOUNTED OR ATTACHED TO MP516A.

M5440A

Application Type: Damper

Dimensions, Approximate: 5-1/8 in. high, 6-7/8 in. wide (with arm)
(130 mm high, 175 mm wide (with arm))

Air Connections: 1/8 in. NPT

Temperature Range: -20 F to +160 F (-29 C to +71 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Type: Spring return

Accessories:

26025B Damper crank arm for 3/8 in. axle. Elongated slot for linkage connection. Slot scaled for 40-50-60-75-90 degrees.

27174B Damper Crank Arm for 7/16 in (11 mm) Axle

27520C 12 inch long, 5/16 inch Pushrod

27520G 24 inch long, 5/16 inch Pushrod

27520K 36 inch long, 5/16 inch Pushrod

27520L 48 inch long, 5/16 inch Pushrod

309389J Mounting Bracket and Linkage

312867C Damper Crank Arm for 1/2 in (12.7 mm) axle. Elongated slot for linkage connection. Slot scaled for 45-60-75-90 degrees.

315321 Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia pushrod

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Comments
		sq in.	sq cm	(inch)	(mm)		
MP516A1087	medium	11 sq in.	71 sq cm	2-1/8 in. to 2-1/2 in.	54 mm to 63 mm	Damper Actuator, Actuator force: Medium, Spring Range: 3 psi to 12 psi	The lever arm moves to the desired minimum position as air pressure increases from 0 to 3 psi, hesitates from 3 to 8 psi, and completes its stroke from 8-12 psi.
MP516A1095	medium	11 sq in.	71 sq cm	2-1/8 in. to 2-1/2 in.	54 mm to 63 mm	Damper Actuator, Actuator force: Medium, Spring Range: 4 psi to 8 psi	No hesitation.
MP516A1103	medium	11 sq in.	71 sq cm	2-1/8 in. to 2-1/2 in.	54 mm to 63 mm	Damper Actuator, Actuator force: Medium, Spring Range: 5 psi to 12 psi	No hesitation.

Pneumatic Actuators—Dampers

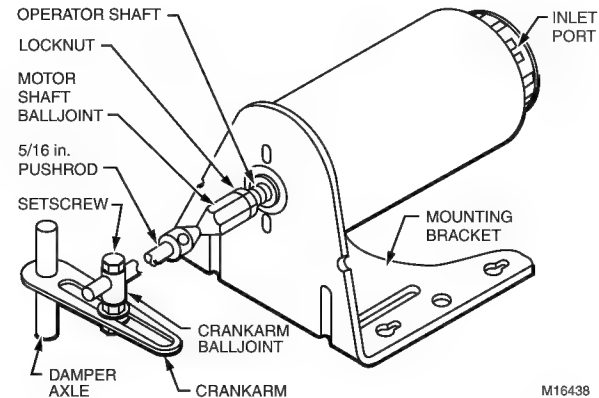
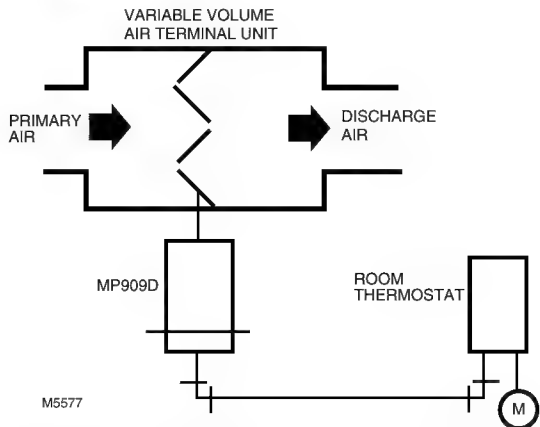
MP909D Pneumatic Damper Actuator



Used for pneumatic proportional control of variable volume terminal units and small dampers. Available in various operating ranges for either individual or sequence operation with other actuators.

Replacement devices are available for Johnson, Powers, Robertshaw, and older Honeywell actuator models.

- Rugged ribbed aluminum body.
- Low-friction shaft bearing.
- Close tolerance on operating range and stroke.
- Protected barb connector.
- Versatile mounting and connecting hardware options.
- Positive leakproof seal.



Application Type: Damper

Dimensions, Approximate: 6-5/16 in. long (add 1 in. for shaft), 2-13/32 in. dia (160 mm long (add 25 mm for shaft), 61 mm dia)

Actuator Force: low

Diaphragm Effective Area: 3 sq in. (19.4 sq cm)

Air Connections: Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing

Temperature Range: 50 F to 140 F (10 C to 60 C)

Maximum Operating Pressure: 30 psi (207 kPa)

Type: Spring return

Approvals:

Underwriters Laboratories, Inc: Component Recognized: Report R18118

Accessories:

14002850-001 External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide

14003640-001 Brackets 3 in, 76 mm, long, 3 3/4 in, 95 mm, wide, 2 3/4 in, 70 mm, high

26025B Damper crank arm for 3/8 in. axle. Elongated slot for linkage connection. Slot scaled for 40-50-60-75-90 degrees.

27174B Damper Crank Arm for 7/16 in (11 mm) Axle

27520C 12 inch long, 5/16 inch Pushrod

27520G 24 inch long, 5/16 inch Pushrod

27520K 36 inch long, 5/16 inch Pushrod

27520L 48 inch long, 5/16 inch Pushrod

312867C Damper Crank Arm for 1/2 in (12.7 mm) axle. Elongated slot for linkage connection. Slot scaled for 45-60-75-90 degrees.

315781 Balljoint with 3/8 in.-16 female threads, fits 5/16 in. dia. pushrod

315321 Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia. pushrod

Product Number	Stroke		Description	Includes
	(inch)	(mm)		
MP909D1201	2.4 in.	61 mm	Spring Range: 3 psi to 8 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint
MP909D1219	2.4 in.	61 mm	Spring Range: 8 psi to 13 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint
MP909D1227	2.4 in.	61 mm	Spring Range: 5 psi to 10 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint
MP909D1318	2.4 in.	61 mm	Spring Range: 8 psi to 13 psi	14002850-001 Fixed External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide
MP909D1334	2.4 in.	61 mm	Spring Range: 5 psi to 10 psi	14003640-001 90 degree Angled Mounting Bracket with Ball Joint
MP909D1367	3.0 in.	76 mm	Spring Range: 5 psi to 10 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint
MP909D1441	3.0 in.	76 mm	Spring Range: 5 psi to 10 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint
MP909D1474	2.4 in.	61 mm	Spring Range: 5 psi to 10 psi	Actuator only. 3/8"-16 Threaded Shaft. No Mounting Bracket or Ball Joint

MP909E,H Pneumatic Damper Actuators

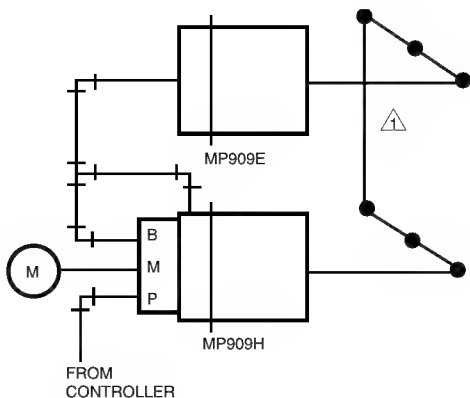
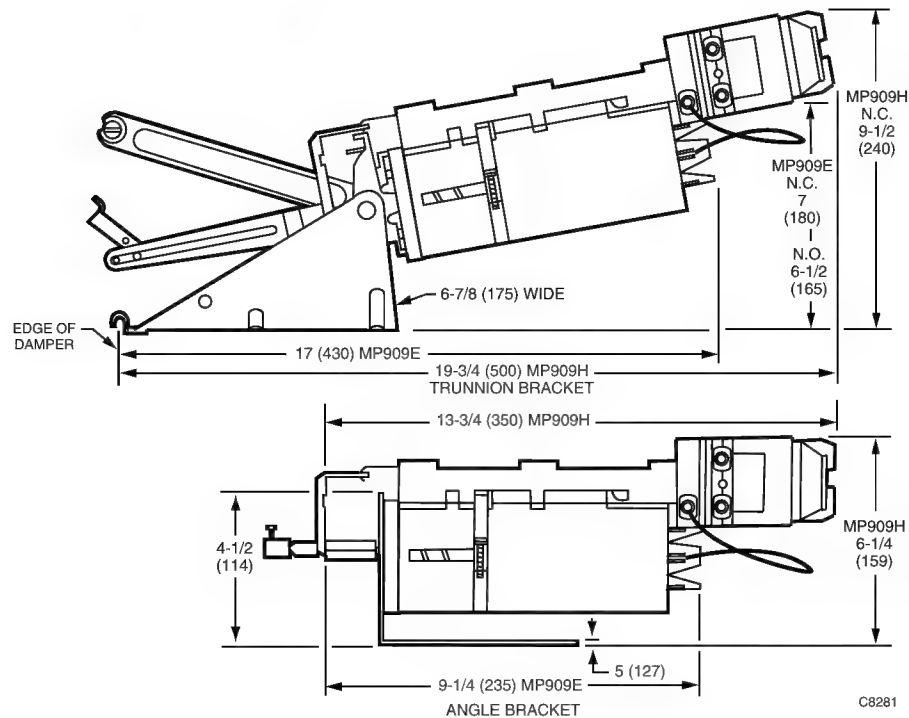


These actuators are used for proportional control of variable volume terminal units, mixing boxes, and small to medium sized dampers. They are available in various operating ranges for either independent operation or sequence operation with other actuators. The MP909E has an optional adjustable stroke feature.; The MP909H includes a positive positioner.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell actuator models.

- Rolling diaphragm operated.
- Low friction shaft bearing.
- Close tolerance on operating range and stroke.
- Non-overlapping spring ranges for sequencing.
- Corrosion resistant materials.
- Reliable-long life.

Dimension Diagram



△ SECTIONS OF LARGE DAMPER REQUIRING MORE THAN ONE OPERATOR MUST BE LINKED

M5575

Application Type: Damper

Air Connections: Barbed fitting for 5/32 in. or 1/4 in. O.D. tubing

Temperature Range:

MP909E: -28 F to 160 F (-33 C to 71 C)

MP909H: -20 F to 160 F (-29 C to 71 C)

Maximum Operating Pressure:

MP909E: 29 psi (200 kPa)

MP909H: 25 psi (172 kPa)

Type: Spring return

Pneumatic Actuators—Dampers

Accessories:

14004210-001 Feedback Spring Kit
26025B Damper crank arm for 3/8 in. axle. Elongated slot for linkage connection. Slot scaled for 40-50-60-75-90 degrees.
27174B Damper Crank Arm for 7/16 in (11 mm) Axle
312867C Damper Crank Arm for 1/2 in (12.7 mm) axle. Elongated slot for linkage connection. Slot scaled for 45-60-75-90 degrees.
312867H Externally mounted Linkage Kit
14000716-001 Internal, Normally Closed, Motor Mounting Kit with Right Drive Ear, For MP909E and MP918.
14002850-001 External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide
14003640-001 Brackets 3 in, 76 mm, long, 3 3/4 in, 95 mm, wide, 2 3/4 in, 70 mm, high
14004062-001 External Mounting Bracket
14004062-002 Internal N.C. Mounting Bracket
14004062-003 Internal N.O. (reversing linkage) Mounting Bracket
315781 Balljoint with 3/8 in.-16 female threads, fits 5/16 in. dia. pushrod
315321 Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia. pushrod
27520C 12 inch long, 5/16 inch Pushrod
27520G 24 inch long, 5/16 inch Pushrod

27520K 36 inch long, 5/16 inch Pushrod
27520L 48 inch long, 5/16 inch Pushrod
314440A MP909 - Clevis, Clevis Pin and Cotter Pin Assembly
14004106-001 Actuator pushrod
14004107-001 Crankarm Assembly for conversion from internal N.C. to external trunnion mounting
14004236-001 Coupler, actuator shaft to 5/16 in, 8 mm, pushrod
14004241-002 Hitch Pin (six sets)
14004242-001 MP918 Top Mount Operator Assembly
14004667-001 Crank arm assembly with 2 Screws (304725-062), nut (14004102-001), Crank arm (14004655-001) for 1/2 in. drive axle
15753692-001 Modular Kit for Jack Shaft Installation of MP909E and MP918B Actuators
15753693-001 End kit for Jack Shaft Installation of MP909E and MP918B Actuators
15753694-001 Operator kit for Jack Shaft Installation of MP909E and MP918B Actuators
CCT2718 Threaded Rod
CCT2725 Threaded Rod

Replacement Parts:

14004137-001 Retrofit Kit for adding positive positioner to MP909E or repair of MP909H

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Comments	Includes
		sq in.	sq cm	(inch)	(mm)			
MP909E1018	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 3 psi to 13 psi Damper Actuator, Actuator force: Medium	—	14002850-001-External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide, Linkage Kit- 14002061-006, 315781-Balljoint
MP909E1026	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 3 psi to 13 psi Damper Actuator, Actuator force: Medium	Special for Honeywell Direct (Serviceline)	Actuator only, No Mounting Bracket or linkage, 3/8"-16 Threaded Shaft
MP909E1034	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	14002850-001 Fixed External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide, Linkage Kit 14002061-006, 315781 Balljoint
MP909E1059	medium	6.6 sq in.	43 sq cm	2.75 in.	70 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	Actuator only, 3/8 in-16 Threaded Shaft with stroke stops. No Mounting Bracket
MP909E1067	medium	6.6 sq in.	43 sq cm	3.0 in.	79 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	Unitary mounting bracket and clevis shaft with stroke stops
MP909E1083	medium	6.6 sq in.	43 sq cm	3.1 in.	79 mm	Damper Actuator, Actuator force: Medium, Spring Range: 2.5 psi to 6.5 psi	—	14002850-001 Fixed External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide, Linkage Kit 14002061-006, 315781 Balljoint
MP909E1158	medium	6.6 sq in.	43 sq cm	3.1 in.	79 mm	Spring Range: 9 psi to 13 psi Damper Actuator, Actuator force: Medium	—	Actuator only, No Mounting Bracket, 3/8"-16 Threaded Shaft
MP909E1174	medium	6.6 sq in.	43 sq cm	3.1 in.	70 mm	Spring Range: 9 psi to 13 psi Damper Actuator, Actuator force: Medium	—	14002850-001 Fixed External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide with 315781 Fixed Balljoint
MP909E1232	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	Special for Control Air Ltd, Canada	Actuator only, No Mounting Bracket, 3/8"-16 Threaded Shaft
MP909E1240	medium	6.6 sq in.	43 sq cm	3.1 in.	79 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	Actuator only, No Mounting Bracket, 3/8"-16 Threaded Shaft
MP909E1349	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range 3 psi to 13 psi Damper Actuator, Actuator force: Medium	—	Internal N.C. trunnion mounting bracket

Pneumatic Actuators—Dampers

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Comments	Includes
		sq in.	sq cm	(inch)	(mm)			
MP909E1356	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range 3 psi to 13 psi Damper Actuator, Actuator force: Medium	—	External trunnion mounting bracket
MP909E1364	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	External trunnion mounting bracket
MP909E1372	medium	6.6 sq in.	43 sq cm	3.1 in.	70 mm	Spring Range: 2.5 psi to 6.5 psi Damper Actuator, Actuator force: Medium	—	External trunnion mounting bracket
MP909E1380	medium	6.6 sq in.	43 sq cm	3.1 in.	79 mm	Spring Range: 9 psi to 13 psi Damper Actuator, Actuator force: Medium	—	External trunnion mounting bracket
MP909E1398	medium	6.6 sq in.	43 sq cm	3.1 in.	79 mm	Spring Range: 9 psi to 13 psi Damper Actuator, Actuator force: Medium	—	Internal N.C. trunnion mounting bracket
MP909E1463	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: 5 psi to 10 psi Damper Actuator, Actuator force: Medium	—	14002850-001 External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide
MP909H1331	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: Positive positioner 10 psi span (5 psi spring included) Damper Actuator, Actuator force: Medium	—	14002850-001 Fixed External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide, Positive Positioner, 315781 Balljoint
MP909H1368	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: Positive positioner 10 psi span (5 psi spring included) Damper Actuator, Actuator force: Medium	—	External Trunnion Bracket, Positive Positioner
MP909H1392	medium	6.6 sq in.	43 sq cm	4 in.	102 mm	Spring Range: Positive positioner 10 psi span (5 psi spring included) Damper Actuator, Actuator force: Medium	—	Mounting Bracket for Internal N.C. Trunnion Mounting, Positive Positioner

Pneumatic Actuators—Dampers

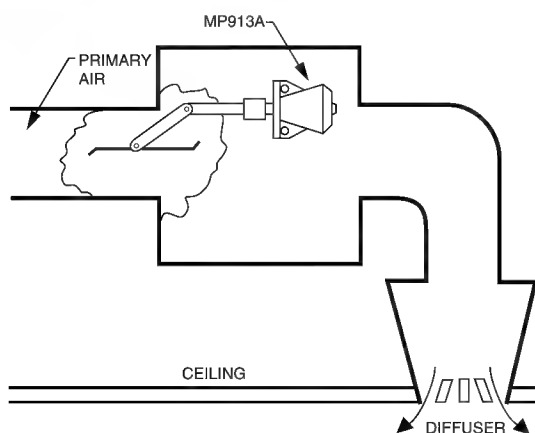
MP913 Pneumatic Variable Volume Damper Actuator



Provides proportional control of variable volume dampers in small high velocity mixing boxes.

Replacement devices are available for Johnson and Robertshaw devices. Suitable for direct replacement only, do not attempt to replace larger damper actuators with this unit.

- Compact in size.
- Neoprene rolling diaphragm.
- The MP913 Operator can be used with or without a crankarm.



M5438

Application Type: Damper

Dimensions, Approximate: 2 5/8 in. high (add 3/4 in. for shaft), 2 1/4 in. dia (67 mm high (add 19 mm for shaft), 57 mm dia)

Air Connections: Barbed fitting for 1/4 in. O.D. tubing

Temperature Range: 50 F to 140 F (10 C to 60 C)

Maximum Operating Pressure: 30 psi (207 kPa)

Type: Spring return

Accessories:

27520C Actuator Accessory - Push Rod (5/16"dia., 12" length) Used With: All Actuators & Dampers

27520G Actuator Accessory - Push Rod (5/16"dia., 24" length) Used With: All Actuators & Dampers

27520K Actuator Accessory - Push Rod (5/16"dia., 36" length) Used With: All Actuators & Dampers

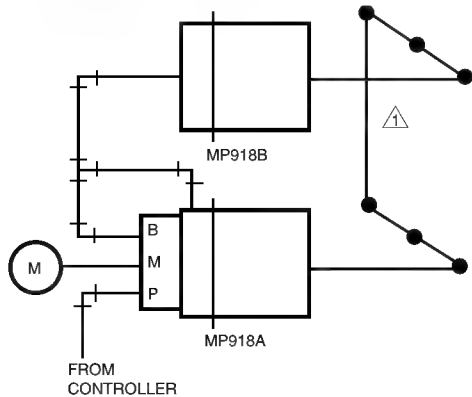
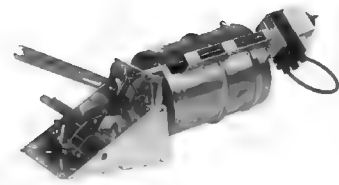
27520L Actuator Accessory - Push Rod (5/16"dia., 48" length) Used With: All Actuators & Dampers

315321 Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia pushrod

315781 Balljoint with 3/8 in.-16 female threads, fits 5/16 in. dia. pushrod

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Includes
		sq in.	sq cm	(inch)	(mm)		
MP913A1003	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 10 psi to 15 psi	14002808-001 Flat Mounting Bracket. Shaft has 1/8 in. dia. hole for a roll pin.
MP913A1011	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 10 psi to 15 psi	3/8"-16 Threaded Shaft.14003640-001 90 degree Angled Mounting Bracket.
MP913A1029	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 5 psi to 10 psi	3/8"-16 Threaded Shaft.14003640-001 90 degree Angled Mounting Bracket.
MP913A1037	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 5 psi to 10 psi	14003640-001 90 degree Angled Mounting Bracket. Shaft has 1/8" dia. hole for a roll pin.
MP913A1177	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 3 psi to 13 psi	14002809-001 90 degree Angled Mounting Bracket (3-point attachment).3/8"-16 Threaded Shaft.
MP913A1045	low	2.2 sq in.	14 sq cm	1 in.	25 mm	Damper Actuator, Actuator force: Low, Spring Range: 5 psi to 10 psi	14003640-001 90 degree Angled Mounting Bracket. Shaft extends 4" with 0 psi applied. It has no threads and no hole for roll pin.

MP918A,B Pneumatic Damper Actuators



FROM CONTROLLER

△ SECTIONS OF LARGE DAMPER REQUIRING MORE THAN ONE OPERATOR MUST BE LINKED

M5576

Used for proportional control of medium- to large-size dampers in HVAC systems. The MP918A,B are rolling diaphragm, piston-type actuators. The MP918A has a positive positioner. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell actuator models.

- Rolling diaphragm operated.
- Low friction shaft bearing.
- Close tolerance on operating range and stroke.
- Versatile mounting and connecting hardware.
- Non-overlapping spring ranges for sequencing.
- Reliable-long life.

Application Type: Damper

Dimensions, Approximate: 20 1/2 in. long, 8 in. high, 6 5/8 in. dia (520 mm long, 205 mm high, 168 mm dia)

Air Connections: 5/32 in. push-on barb (Pilot), 1/4 in. push-on barb (main.)

Temperature Range: -20 F to +158 F (-29 C to +70 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Type: Spring return

Approvals:

Underwriters Laboratories, Inc: Component Recognized: Report R18118

Accessories:

14004236-001 Coupler, actuator shaft to 5/16 in, 8 mm, pushrod

14004324-001 Kit for Alternate External Top-Mount, MP909E,H MP918A,B

14004242-001 MP918 Top Mount Operator Assembly

14004264-002 MP918 Positive Positioner Retrofit Kit - includes 10 psi feedback spring

14004107-001 Crankarm Assembly for conversion from internal N.C. to external trunnion mounting

15753693-001 End kit for Jack Shaft Installation of MP909E and MP918B Actuators

14004241-002 Hitch Pin (six sets)

15753692-001 Modular Kit for Jack Shaft Installation of MP909E and MP918B Actuators

14004667-001 Crank arm assembly with 2 Screws (304725-062), nut (14004102-001), Crank arm (14004655-001) for 1/2 in. drive axle

15753694-001 Operator kit for Jack Shaft Installation of MP909E and MP918B Actuators

14004210-001 Feedback Spring Kit

14004106-001 Actuator pushrod

CCT2718 Threaded Rod

CCT2725 Threaded Rod

Replacement Parts:

14004062-001 External Mounting Bracket

14004062-002 Internal, N.C. Mounting Bracket

14004062-003 Internal N.O. (reversing linkage) Mounting Bracket

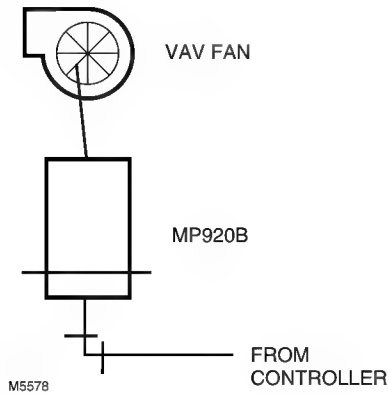
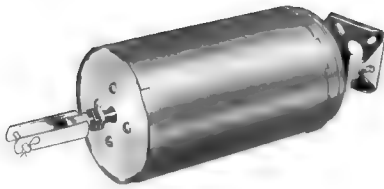
14004264-001 Repair Kit, Positive Positioner and Bracket Assembly

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Includes
		sq in.	sq cm	(inch)	(mm)		
MP918A1024	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: Positive positioner 10 psi span (5 psi spring included)	14004062-001 External Mounting Bracket. Positive Positioner
MP918A1057	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: Positive positioner 10 psi span (5 psi spring included)	14004062-002 Internal N.C. Mounting Bracket. Positive Positioner
MP918A1081	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: Positive positioner 10 psi span (5 psi spring included)	14004062-003 Internal N.O. (reversing linkage) Mounting Bracket. Positive Positioner
MP918B1006	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 3 psi to 13 psi	14004062-001 External Mounting Bracket.
MP918B1014	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 3 psi to 13 psi	14004062-001 External Mounting Bracket.
MP918B1022	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 8 psi to 13 psi	14004062-003 Internal N.O. (reversing linkage) Mounting Bracket. Positive Positioner

Pneumatic Actuators—Dampers

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Includes
		sq in.	sq cm	(inch)	(mm)		
MP918B1030	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Force: High, Spring Range: 3 to 13 psi	No Mounting Bracket Actuator only
MP918B1048	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Force: High, Spring Range: 3 to 13 psi	14004062-001 External Mounting Bracket
MP918B1063	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 5 psi to 10 psi	14004062-001 External Mounting Bracket
MP918B1071	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 3 psi to 7 psi	14004062-002 Internal N.C. Mounting Bracket
MP918B1089	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 3 psi to 7 psi	14004062-001 External Mounting Bracket
MP918B1097	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 8 psi to 13 psi	14004062-002 Internal N.C. Mounting Bracket
MP918B1105	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 8 psi to 13 psi	14004062-003 Internal N.O. (reversing linkage) Mounting Bracket. Positive Positioner
MP918B1113	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 8 psi to 13 psi	No Mounting Bracket Actuator only
MP918B1196	high	23.8 sq in.	154 sq cm	3.5 in.	90 mm	Damper Actuator, Actuator force: High, Spring Range: 8 psi to 13 psi	14004062-001 External Mounting Bracket

MP920 Pneumatic Damper Actuator



Provides proportional control of large dampers in HVAC systems or inlet vanes on a VAV fan. Positive positioner available separately.

Replacement devices are available for Robertshaw actuator models.

- Rolling diaphragm operated.
- Fail safe on over pressure.
- Actuator can be swivel mounted from either end to pipe, floor, or wall surface.
- Optional positive positioner provides accurate positioning under varying load conditions.

Application Type: Damper

Dimensions, Approximate: (Less bracket: 315 long, 157 mm dia / Less bracket with positioner: 415 mm long, 210 mm dia)

Less bracket: 12 7/32 in. long, 6 3/16 in. dia / Less bracket with positioner: 16 7/32 in. long, 8 1/4 in. dia

Air Connections: Barbed fitting for 1/4 in. O.D. plastic tubing

Temperature Range: -20 F to +158 F (-30 C to +70 C)

Maximum Operating Pressure: 29 psi (200 kPa)

Humidity Range: Type: Spring return

Accessories:

14004345-001 Positive Positioner Kit, 10 psi feedback spring

AK3556 Pipe Mounting Assembly for 1 1/4" pipe

AK3557 Short Clevis Bag Assembly for 3/8-16 threaded rod

AK3558 Swivel Bracket Bag Assembly

AK3559 Long Clevis Bag Assembly with actuator shaft coupling for 5/8-11 threaded rod

AK3560 Balljoint, 3/8-24 threaded stud with couplings for 5/8-11 threaded rod and actuator shaft

AK3561 Balljoint, 3/8-24 threaded stud with couplings for 3/8-16 threaded rod

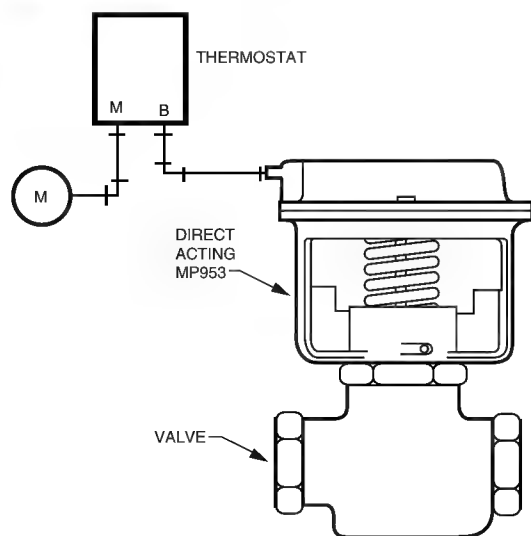
14004062-001 External Mounting Bracket

14004241-002 Hitch Pin (six sets)

Product Number	Actuator Force	Diaphragm Effective Area		Stroke		Description	Includes
		sq in.	sq cm	(inch)	(mm)		
MP920B1002	high	24.8 sq in.	160 sq cm	6 in.	150 mm	Damper Actuator, Actuator force: High, Spring Range: 7.25 psi to 13 psi	Actuator only, No Bracket (order positive positioner, mounting and connecting hardware separately)

Pneumatic Actuators—Valves

MP953C,D Pneumatic Coil Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011 and V5013 valve assemblies.

Replacement devices are available for older Honeywell actuators.

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Integral positive positioner relay provides positive positioning under varying load conditions.

Application Type: Valve Actuator

Dimensions, Approximate:

- 5 in. dia, 4 5/8 in. high (127 mm dia, 117 mm high)
- 7 1/8 in. dia, 5 5/8 in. high (181 mm dia, 143 mm high)
- 8 in. dia, 6 1/2 in. high (203 mm dia, 165 mm high)
- 13 in. dia, 10 in. high (330 mm dia, 254 mm high)

Action: Direct Acting

Air Connections: Dual barbed fitting for 5/32 in. O.D. and 1/4 in. O.D. plastic tubing

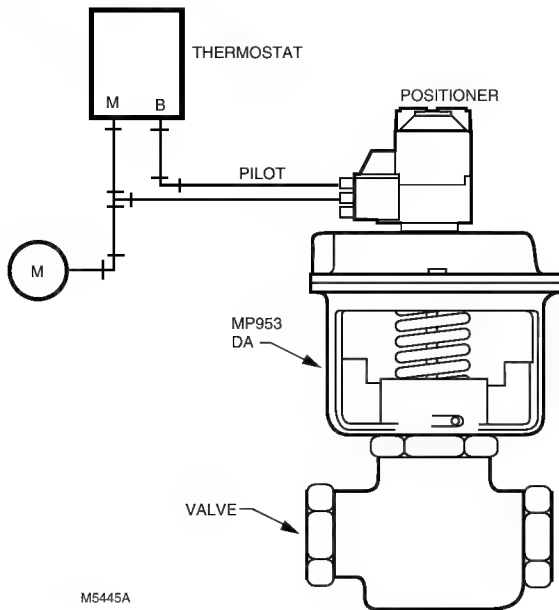
Temperature Range: 0 F to 140 F (-18 C to +60 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Humidity Range: Type: Spring return

Product Number	Actuator Force	Stroke		Description	Includes
		(inch)	(mm)		
MP953C1000	low	3/4 in.	19 mm	Valve Actuator, 5 in. dia., DA, Actuator force: Low, Spring Range: 2 psi to 7 psi	—
MP953C1018	low	3/4 in.	19 mm	Valve Actuator, 5 in. dia., DA, Actuator force: Low, Spring Range: 8 psi to 12 psi	—
MP953C1026	low	3/4 in.	19 mm	Valve Actuator, 5 in. dia., DA, Actuator force: Low, Spring Range: 4 psi to 11 psi	—
MP953C1067	medium	3/4 in.	19 mm	Valve Actuator, 8 in. dia., DA, Actuator force: Medium, Spring Range: 2 psi to 7 psi	311851-062 Stem Extension Assembly
MP953C1075	medium	3/4 in.	19 mm	Valve Actuator, 8 in. dia., DA, Actuator force: Medium, Spring Range: 8 psi to 12 psi	311851-062 Stem Extension Assembly
MP953C1083	medium	3/4 in.	19 mm	Valve Actuator, 8 in. dia., DA, Actuator force: Medium, Spring Range: 4 psi to 11 psi	311851-062 Stem Extension Assembly
MP953C1471	high	1 1/2 in.	38 mm	Valve Actuator, 13 in. dia., DA, Actuator force: High, Spring Range: 2 psi to 7 psi	312466-605 Stem Extension Assembly
MP953C1489	high	1 1/2 in.	38 mm	Valve Actuator, 13 in. dia., DA, Actuator force: High, Spring Range: 4 psi to 11 psi	312466-605 Stem Extension Assembly
MP953C1547	medium	1 1/2 in.	38 mm	Valve Actuator, 8 in. dia, DA, Actuator force: Medium, Spring Range: 3 psi to 15 psi	—
MP953D1107	medium	3/4 in.	19 mm	Valve Actuator, 7-1/8 in. dia., RA, Actuator force: Medium, Spring Range: 8 psi to 13 psi	—
MP953D1131	medium	3/4 in.	19 mm	Valve Actuator, 7-1/8 in. dia, Actuator force: Medium, Spring Range: 4 psi to 11 psi	—
MP953D1172	medium	3/4 in.	19 mm	Valve Actuator, 7-1/8 in. dia, Actuator force: Medium, Spring Range: 3 psi to 7 psi	—

MP953E,F Pneumatic Coil Valve Actuators



Pneumatic actuators provide proportional control of steam or hot or cold liquids in HVAC systems by operating V5011 and V5013 valve assemblies.

Replacement devices are available for older Honeywell actuators.

- Rolling diaphragm for long life and low hysteresis.
- Easily attached to valve.
- Can be installed after piping valve.
- Slide lock feature permits simple engagement to valve stem.
- Direct- or reverse-action control.
- Integral positive positioner relay provides positive positioning under varying load conditions.

Application Type: Valve Actuator

Dimensions, Approximate:

- 5 in. dia, 4 5/8 in. high (127 mm dia, 117 mm high)
- 7 1/8 in. dia, 5 5/8 in. high (181 mm dia, 143 mm high)
- 8 in. dia, 6 1/2 in. high (203 mm dia, 165 mm high)
- 13 in. dia, 10 in. high (330 mm dia, 254 mm high)

Action: Direct Acting or Reverse Acting

Air Connections: Pilot: Barbed fitting for 5/32 in. O.D. plastic tubing

Main: Barbed fitting for 1/4 in. O.D. plastic tubing

Temperature Range: 0 F to 140 F (-18 C to +60 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Type: Spring return

Accessories:

14004139-001 MP953A and E (Direct Acting, 8 in. and 13 in. dia, 3/4 in. stroke) Positive Positioner Retrofit Kit

14004140-001 MP953A and E (Direct Acting, 8 in. and 13 in. dia, 1-1/2 in. stroke) Positive Positioner Retrofit Kit

14004138-001 MP953B and F (Reverse Acting) Positive Positioner Retrofit Kit

14004214-001 MP953A and E (5 in. dia 3/4 in. stroke) Feedback Spring Kit

Product Number	Actuator Force	Stroke		Description	Includes
		(inch)	(mm)		
MP953E1301	low	3/4 in.	19 mm	5 in. dia., Direct Acting, Actuator force: Low, Spring Range: 4 psi to 11 psi with positioner (3 psi range)	Positive Positioner with 3 psi range (21kPa)
MP953E1319	low	3/4 in.	19 mm	5 in. dia., Direct Acting, Actuator force: Low, Spring Range: 4 psi to 11 psi with positioner (5 psi range)	Positive Positioner with 5 psi range (35 kPa)
MP953E1327	low	3/4 in.	19 mm	5 in. dia., Direct Acting, Actuator force: Low, Spring Range: 4 psi to 11 psi with positioner (10 psi range)	Positive Positioner with 10 psi range (70 kPa)
MP953E1368	medium	3/4 in.	19 mm	8 in. dia., Direct Acting, Actuator force: Medium, Spring Range: 4 psi to 11 psi with positioner (3 psi range)	Positive Positioner with 3 psi range 311851-062 Stem Extension Assembly
MP953E1376	medium	3/4 in.	19 mm	8 in. dia., Direct Acting, Actuator force: Medium, Spring Range: 4 psi to 11 psi with positioner (5 psi range)	Positive Positioner with 5 psi range 311851-062 Stem Extension Assembly
MP953E1384	medium	3/4 in.	19 mm	8 in. dia., Direct Acting, Actuator force: Medium, Spring Range: 4 psi to 11 psi with positioner (10 psi range)	Positive Positioner with 10 psi range 311851-062 Stem Extension Assembly
MP953E1400	high	1 1/2 in.	38 mm	13 in. dia., Direct Acting, Actuator force: High, Spring Range: 4 psi to 11 psi with positioner (5 psi range)	Positive Positioner with 5 psi range 312466-605 Stem Extension Assembly
MP953E1418	high	1 1/2 in.	38 mm	13 in. dia., Direct Acting, Actuator force: High, Spring Range: 4 psi to 11 psi with positioner (10 psi range)	Positive Positioner with 10 psi range 312466-605 Stem Extension Assembly

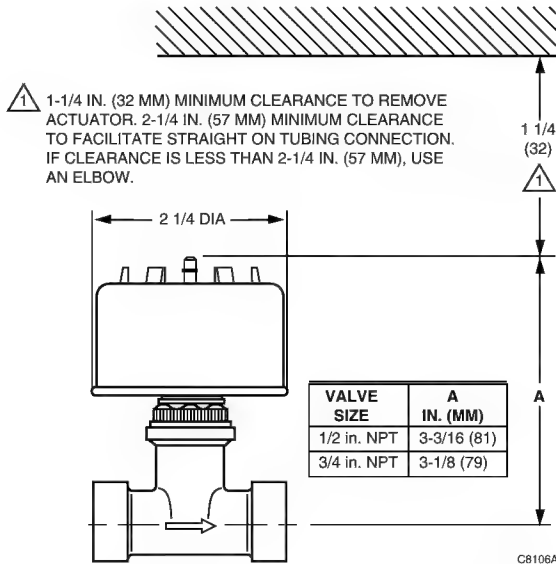
Pneumatic Actuators—Valves

Product Number	Actuator Force	Stroke		Description	Includes
		(inch)	(mm)		
MP953E1443	high	3/4 in.	19 mm	13in. dia., Direct Acting, Actuator force: High, Spring Range: 4 psi to 11 psi with positioner (10 psi range)	14004697-001 Stem Extension Assembly Positive Positioner with 10 psi range
MP953F1093	medium	3/4 in.	19 mm	7 1/8 in. dia., Reverse Acting, Actuator force: Medium, Spring Range: 8 psi to 13 psi with positioner (3 psi range)	Positive Positioner with 3 psi range, EPDM diaphragm
MP953F1101	medium	3/4 in.	19 mm	7 1/8 in. dia., Reverse Acting, Actuator force: Medium, Spring Range: 8 psi to 13 psi with positioner (5 psi range)	Positive Positioner with 5 psi range, EPDM diaphragm
MP953F1119	medium	3/4 in.	19 mm	7 1/8 in. dia., Reverse Acting, Actuator force: Medium, Spring Range: 8 psi to 13 psi with positioner (10 psi range)	Positive Positioner with 10 psi range, EPDM diaphragm

MP958 Pneumatic Valve Actuators



The MP958 Pneumatic Valve Actuator is direct-acting and used only with Honeywell V5852A2xx, V5862A2xx, V5853A2xx, and V5863A2xx Terminal Unit Valves to control hot and/or chilled water.



Application Type: Valve

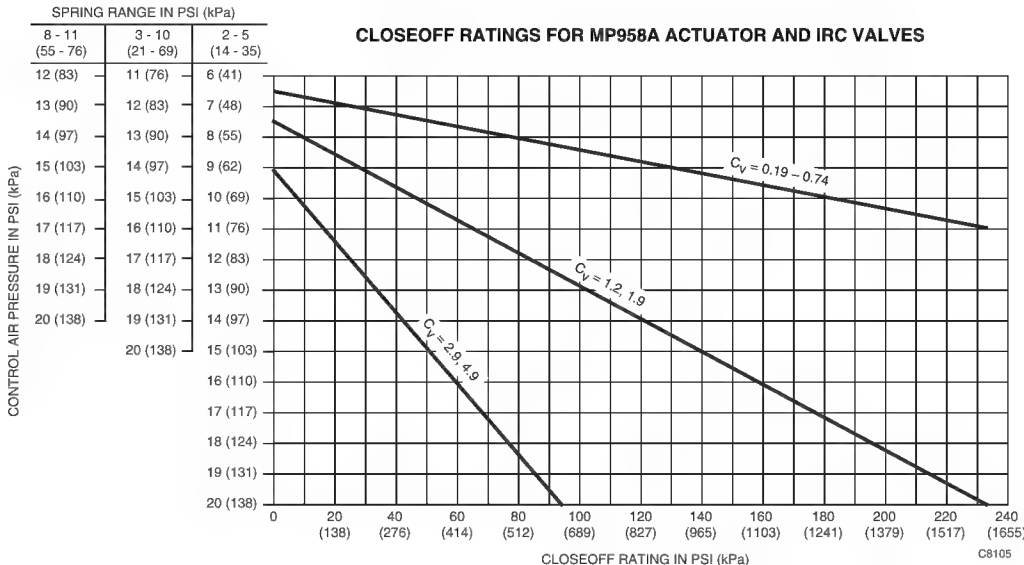
Dimensions, Approximate: 2 1/4 in. dia, 3 3/16 in. maximum high (57 mm dia, 81 mm maximum high)

Action: Direct Acting

Air Connections: Barbed fitting for 1/4 in. O.D. plastic tubing

Maximum Operating Pressure: 30 psi

Type: Spring return



Product Number	Actuator Force	Description	Comments
MP958A1009	low	Valve Actuator, Actuator force: Low, Spring Range: 2 psi to 5 psi	Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx
MP958A1017	low	Valve Actuator, Actuator force: Low, Spring Range: 3 psi to 10 psi	Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx
MP958A1025	low	Valve Actuator, Actuator force: Low, Spring Range: 8 psi to 11 psi	Only works with V5852A2xx, V5862A2xx, V5853A2xx, V5863A2xx

Pneumatic Actuators—Valves

Pneumatic Damper Actuator Parts and Accessories

OS Number	Description	Used With
14000650-007	Zinc Washer, 3/4 inch outside diameter, 41/64 inch inside diameter with 3/64 thickness	MP903, MP904, MP909
14001213-001	MP904A and B Diaphragm	MP904A,B
14002061-001	Damper Linkage Kit with Template	MP909E,F
14002850-001	External Mounting Bracket, 5 3/8 in. (137 mm) long, 5 in. (127 mm) wide	MP909D,E
14003640-001	Brackets 3 in, 76 mm, long, 3 3/4 in, 95 mm, wide, 2 3/4 in, 70 mm, high	MP909D, MP913
14003820-023	Pushrod, Balljoint and Crankarm Assembly	MP516, MP916, MP909D
14003820-019	Bracket and Linkage Assembly	MP909D, MP516
14004062-001	External Mounting Bracket	MP909D, MP918A,B
14004062-002	Internal N.C. Mounting Bracket	MP918A,B
14004062-003	Internal N.O. (reversing linkage) Mounting Bracket	MP918A,B
14004106-002	Push rod assembly including rod motor link (14004101-002) and midget hex rivnut (14004108-001)	MP918A, MP909E,H, MP918A,B
14004106-001	Actuator pushrod	MP918A,B
14004106-002	Push rod assembly including rod motor link (14004101-002) and midget hex rivnut (14004108-001)	MP918A, MP909E,H, MP918A,B,
14004106-001	Actuator pushrod	MP918A,B,
14004107-001	Crankarm Assembly for conversion from internal N.C. to external trunnion mounting	MP909E,H, MP918A,B
14004136-001	MP904 Positive Positioner Retrofit Kit	MP904A
14004137-001	Retrofit Kit for adding positive positioner to MP909E or repair of MP909H	MP909E, MP909H
14004210-001	Feedback Spring Kit	MP918A, MP909H
14004236-001	Coupler, actuator shaft to 5/16 in, 8 mm, pushrod	MP918
14004237-002	Bag assembly including 4 hex head slotted drill point screws (14004513-001)	MP918B
14004241-002	Hitch Pin (six sets)	MP918A,B, MP909E,H
14004242-001	Top Mount Operator Assembly	MP909E,H, MP918A,B
14004264-001	Repair Kit, Positive Positioner and Bracket Assembly	MP918A
14004264-002	MP918 Positive Positioner Retrofit Kit - includes 10 psi feedback spring	MP918B
14004313-001	MP918 and MP909 Drive Ear Kit for Normally Closed Damper Assemblies	MP909E,H, MP918A,B
14004313-002	MP918 and MP909 Drive Ear Kit for Normally Open Damper Assemblies	MP918A,B, MP909E,H
14004313-003	Hardware Bag assembly kit including Drive Axle (14004145-001), Screw (15753279-001), Nut (7289-21), and Instruction sheet in a Cloth Bag (7640)	MP918B, MP918B, MP918A
14004345-001	Positive Positioner Kit, 10 psi feedback spring	MP920B
14004350-001	Carbon Steel SAE 100 Clevis Pin (1/4 x 7/8)	MP918
14004577-001	MP953 A, C, and E (Direct Acting, 5 in. dia.) Yoke/Base Assembly	MP909E,H, MP953A,C,E
14004830-001	Stainless steel Spring-feedback 67K PA (8.75)	MP920
309292	MP516A Diaphragm	MP516
309389J	Mounting Bracket and Linkage	MP516
312809C	MP904A and B Tube and Diaphragm Assembly	MP904A,B
312867C	Damper Crank Arm for 1/2 in (12.7 mm) axle. Elongated slot for linkage connection. Slot scaled for 45-60-75-90 degrees.	MP516, MP909D, MP909E, MP909H
312867H	Externally mounted Linkage Kit	MP909D,E,H, MP516
314100	MP909A Replacement Diaphragm	MP909A
314231	MP909B Replacement Diaphragm	MP909B
314440A	MP909 - Clevis, Clevis Pin and Cotter Pin Assembly	MP909
314503	MP909C Replacement Diaphragm	MP909C
314959A	MP904 Stroke Stop Adjustment Kit	MP904
315321	Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia pushrod	MP516, MP516, MP909D,E,H, MP913
315321G	Crankarm and Linkage	MP909A,D
315781	Balljoint with 3/8 in.-16 female threads, fits 5/16 in. dia. pushrod	MP909D,E,H
315782	Balljoint (9/16 in.-18 UNC) accepts 5/16 in. Pushrod	MP920B
AK3556	Pipe Mounting Assembly for 1 1/4" pipe	MP920
AK3557	Short Clevis Bag Assembly for 3/8-16 threaded rod	MP920B
AK3558	Swivel Bracket Bag Assembly	MP920B
AK3559	Long Clevis Bag Assembly with actuator shaft coupling for 5/8-11 threaded rod	MP920B
AK3560	Balljoint, 3/8-24 threaded stud with couplings for 5/8-11 threaded rod and actuator shaft	MP920B
AK3561	Balljoint, 3/8-24 threaded stud with couplings for 3/8-16 threaded rod	MP920B

Pneumatic Valve Actuator Parts and Accessories

OS Number	Description	Used With
14002039-001	MP953D Diaphragm Sleeve	MP953B,D,F
14002040-002	MP953D Diaphragm	MP953B,D,F
14002934-001	Helical Green enamel over Zinc spring, outside diameter 3 1/8 inch, inside diameter 2 1/4 inch	MP953C
14003124-002	MP953B, D or F Diaphragm Repair Kit	MP953B,D,F
14004138-001	MP953B and F (Reverse Acting) Positive Positioner Retrofit Kit	MP953B,F
14004139-001	MP953A and E (Direct Acting, 8 in. and 13 in. dia, 3/4 in. stroke) Positive Positioner Retrofit Kit	MP953A,E
14004140-001	MP953A and E (Direct Acting, 8 in. and 13 in. dia, 1-1/2 in. stroke) Positive Positioner Retrofit Kit	MP953A,E
14004211-001	MP953A and E (8 in. and 13 in. dia, 3/4 in. stroke) Feedback Spring Kit	MP953E
14004212-001	MP953A and E (8 in. and 13 in. dia, 1-1/2 in. stroke) Feedback Spring Kit	MP953E, MP953E
14004213-001	MP953B and F (Reverse Acting) Feedback Spring Kit	MP953E, MP953F
14004214-001	MP953A and E (5 in. dia) Feedback Spring Kit	MP953F, MP953E
14004298-003	MP953B, C, D and F - Actuator Base Screw	MP953C,D,E,F
14004298-001	Thread forming Screw, Size 4-40	MP953
14004578-001	MP953 B, D, and F (Reverse Acting, 7-1/8 in. dia.) Yoke/Base Assembly	MP953B,D,F
14004578-001	MP953 B, D, and F (Reverse Acting, 7-1/8 in. dia.) Yoke/Base Assembly	MP953B,D,F
14004667-001	Crank arm assembly with 2 Screws (304725-062), nut (14004102-001), Crank arm (14004655-001) for 1/2 in. drive axle	MP953C
14004697-001	Stem Extension	MP953C,E
14004697-001	Stem Extension	MP953C,E
310502/0767	Retainer used on MP953A, C	MP953A,C,E (5")
310664	MP953A, C and E (5 in. and 8 in. models only) Tension Spring	MP953A,C,E
310665/0062	Spring Support for MP953	MP953A,C,E (5")
310668	MP953A, C and E (5 in. dia) High Temperature Silicone Diaphragm - Old Style	MP953A,C,E
311616	MP953A, C and E (5 in. dia) Main Spring (2-7 psi spring range - Brown)	MP953A,C
311618	MP953A, C and E (5 in. dia) Main Spring (8-12 psi spring range - Gray)	MP953A,C
311749/0605	Cup diaphragm, 8" for MP953A, C, E	MP953A,C,E (8")
311750	MP953A, C and E (8 in. dia) Regular Temperature Neoprene Diaphragm - New Style	MP953A,C,E
311851/0062	Stem extension for 8" MP953A, C, E	MP953A,C,E (8", 3/4" Stroke)
311852	Spring for MP953	MP953A,C (8", 2-7 psi)
311855	Spring	MP953C
312180	Ring clamp for MP953	MP953D,F
312505	Neoprene Diaphragm - New Style	MP953A,C,E
312760	Neoprene Diaphragm - New Style	MP953A,C,E
312817	MP953C (5 in. dia) Cover	MP953C (5" Dia.)
313541/0605	Button for MP953	MP953D
313745	MP953A, C and E (5 in. dia) High Temperature Silicone Diaphragm - New Style	MP953A,C,E
314153	MP953A, C and E (8 in. dia) High Temperature Silicone Diaphragm - New Style	MP953
314652	Spring for MP953	MP953D,F
315020	Cup for MP953	MP953C,E
315321	Crankarm Balljoint with 1/4 in. male threads, fits 5/16 in. dia pushrod	MP516, MP516, MP909D,E,H, MP913
315781	Balljoint with 3/8 in.-16 female threads, fits 5/16 in. dia. pushrod	MP909D,E,H
315782	Balljoint (9/16 in.-18 UNC) accepts 5/16 in. Pushrod	MP920B
314646A/0062	Plate, Spring for 13" MP953A, C	MP953A, MP953C,E
314650A	MP953B, D and F (Reverse Acting) Support Assembly (for Series-2 actuators only, use this Support Assembly and 316059A Yoke Assembly to Convert Series-1 MO/MP953)	MP953B,D,F
314651A	MP953B, D and F (Reverse Acting) Yoke Assembly for Support Assembly- with nylon insert	MP953B,D,F
314683/0062	Retainer stem for 13" MP953	MP953A,C,E (13")
316059A	MP953B, D and F (Reverse Acting) Yoke Assembly for Support Assembly- with helicoil insert	MP953B,D,F

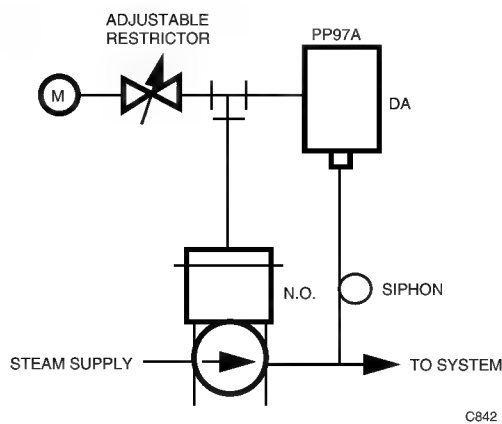
Pneumatic Controllers—Pressure

PP97 Pneumatic Pressure Control



One-pipe, pressure operated device that provides proportional control of pneumatic valves to control steam, air, noncorrosive gas, or noncorrosive liquid pressure. Replacement devices are available for Johnson, Powers, Robertshaw, and older Honeywell pneumatic pressure controllers.

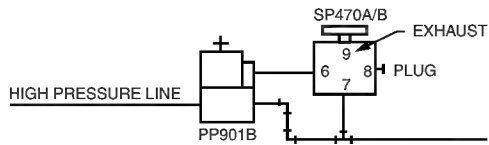
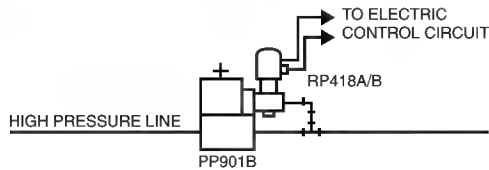
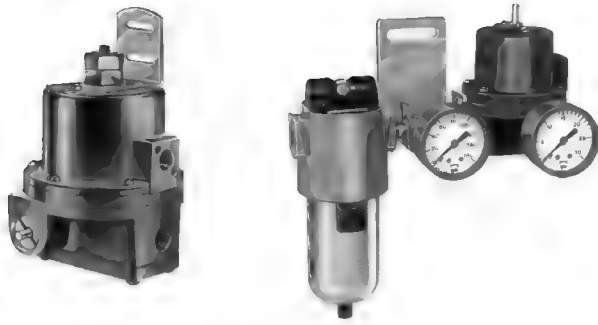
- Easily accessible adjustments.
- Direct Acting (DA) or Reverse Acting (RA) setting.



Application Type: Proportional Pressure
Dimensions, Approximate: 7 in. high, 5 in. wide, 3-1/8 in. deep
(178 mm high, 127 mm wide, 79 mm deep)
Connections: Bellows: 1/4 in. NPT
Air: 1/8 in. NPT
Mounting Type: Lugs for 3- point surface mounting

Product Number	Action	Approximate Throttling Range at Midscale Maximum		Actuator Force	
		(psi)	(kPa)	(psi)	(kPa)
PP97A1019	Reverse Acting, Direct Acting	3.2 oz/square in.	1.4 kPa	0.1 oz/square in.	0.04 kPa
PP97A1035	Reverse Acting, Direct Acting	1.5 psi	10 kPa	0.1 psi	0.7 kPa
PP97A1043	Reverse Acting, Direct Acting	4.1 psi	28 kPa	0.4 psi	3 kPa
PP97A1076	Reverse Acting, Direct Acting	12 psi	83 kPa	2.5 psi	17 kPa

PP901; PP902 Pressure Reducing Valves



M12011

Used to control the pressure of the air delivered to pneumatic control systems. Models available for single-pressure systems or two-pressure systems (Day/Night or Summer/Winter) requiring two independently regulated pressure settings. Dual-pressure units switch from the lower settings to the higher settings when main air is applied to the pilot port. Models also available including a sub-micron filter assembly and pressure gauges. Replacement devices are available for JOhnson, Powers, Robertshaw, Barber-Colman and older HOneywell pressure reducing valves.

- Built-in adjustable safety relief valve for limiting downstream pressure.
- For two-pressure models:
 - Pressure changes accomplished with manual switch or automatically with electric pneumatic switch.
 - Adjustable stops for desired settings.

Application Type: Pressure Reducing

Connections: inlet and outlet 1/4 in. NPT

Accessories:

- 305965** Pressure Gage 0 to 30 psi, 1 1/2 in. 1/8 NPT center back
- 804191E** 2 1/2 in. dia. Pneumatic Panel-mounted Gage (0 to 60 psi), 1/8 in. NPT connection
- 305917** Indication gauge (0-160psi, 2', 1/4 NPT back connected)

Replacement Parts:

- 316203A** Pressure Regulator Valve Assembly, PP901A & PP901B, PP902A,B.
- 316134B** PP901A & B Diaphragm Repair Kit
- 14004203-001** Cartridge Kit
- 14004205-002** PP901, PP902A & B Filter Station Assembly
- 14003121-002** Filter for PP9020A,B

Product Number	Dimensions, Approximate		Output Pressure Range		Pressure Range		Includes
	(inch)	(mm)	(psi)	(kPa)	(psi)	(kPa)	
PP901A1004	11 in. high, 8 7/8 in. wide, 3 3/4 in. deep	279 mm high, 225 mm wide, 95 mm deep	primary pressure: adj.0 to 25 psi.	primary pressure: adj.0 to 172 kPa.	inlet 45 to 150 psi	inlet 310 to 1034 kPa	Gage tapping to measure the regulated pressure.
PP901B1002	11 in. high, 8 7/8 in. wide, 3 3/4 in. deep	279 mm high, 225 mm wide, 95 mm deep	primary pressure: adj.0 to 25 psi. secondary pressure: adj. 0 to 5 psi above primary rating	primary pressure: adj.0 to 172 kPa; secondary pressure: adj. 0 to 34kPa above primary setting.	inlet 45 to 150 psi	inlet 310 to 1034 kPa	Gage tapping to measure the regulated pressure.
PP902C1009	11 in. high, 8 7/8 in. wide, 3 3/4 in. deep	279 mm high, 225 mm wide, 95 mm deep	primary pressure: adj.0 to 25 psi;	primary pressure: adj.0 to 172 kPa.	inlet 45 to 150 psi	inlet 310 to 1034 kPa	Submicron filter assembly and two psig gages.
PP902D1007	11 in. high, 8 7/8 in. wide, 3 3/4 in. deep	279 mm high, 225 mm wide, 95 mm deep	primary pressure: adj.0 to 25 psi; secondary pressure: adj. 0 to 5 psi above primary rating	primary pressure: adj.0 to 172 kPa; secondary pressure: adj. 0 to 34kPa above primary setting.	inlet 45 to 150 psi	inlet 310 to 1034 kPa	Submicron filter assembly and two psig gages.

Pneumatic Controllers—Pressure

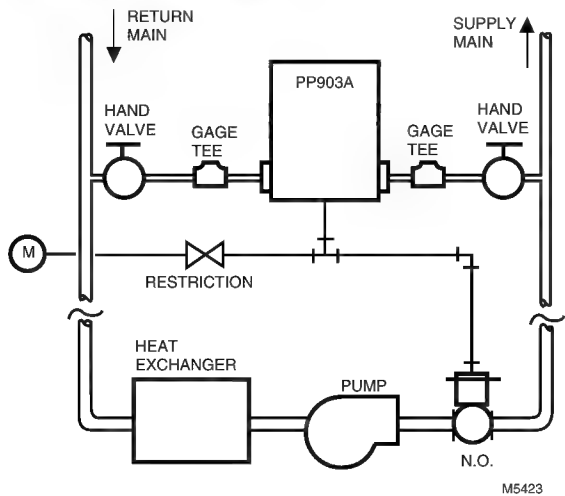
PP903 Pneumatic Differential Pressuretrol



One-pipe, pressure operated device used to provide proportional control of pneumatic valve or damper actuators by varying the pressure to the actuators in relation to the pressure difference between two separate water pressures.

Replacement devices are available for Johnson, Powers, Robertshaw, and older Honeywell pneumatic pressure controllers.

- Easily accessible adjustments.
- Direct Acting (DA) or Reverse Acting (RA) setting.
- Mounting lugs for quick mounting.



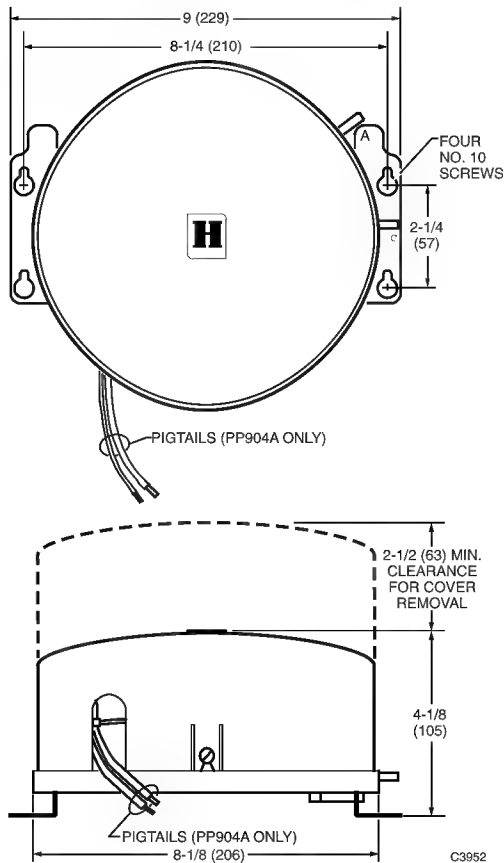
Application Type: Differential Pressure
Dimensions, Approximate: 8 5/8 in. high, 9 5/8 in. wide, 3 1/4 in. deep
(219 mm high, 244 mm wide, 83 mm deep)
Connections: 1/8 in. NPT
Mounting Type: Mounting lugs for quick mounting

Product Number	Action	Approximate Throttling Range at Midscale Maximum		Actuator Force		Pressure Range		Maximum Operating Temperature	
		(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)
PP903A1010	Reverse Acting, Direct Acting	16 psi	110 kPa	3 psi	21 kPa	2 to 85 psi	14 to 586 kPa	2 to 85 psi	14 to 586 kPa
PP903A1036	Reverse Acting, Direct Acting	25 psi	172 kPa	7.5 psi	52 kPa	0 to 300 psi	0 to 2068 kPa	0 to 300 psi	0 to 2068 kPa

PP904 Static Pressure Regulators

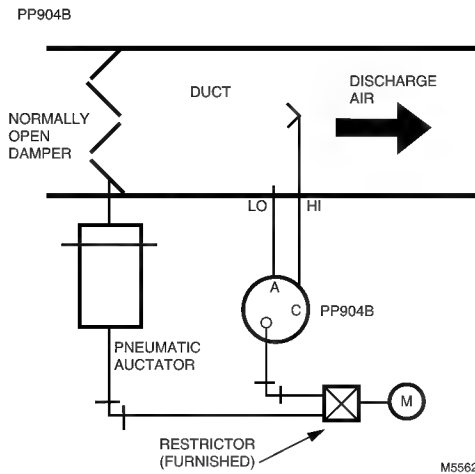
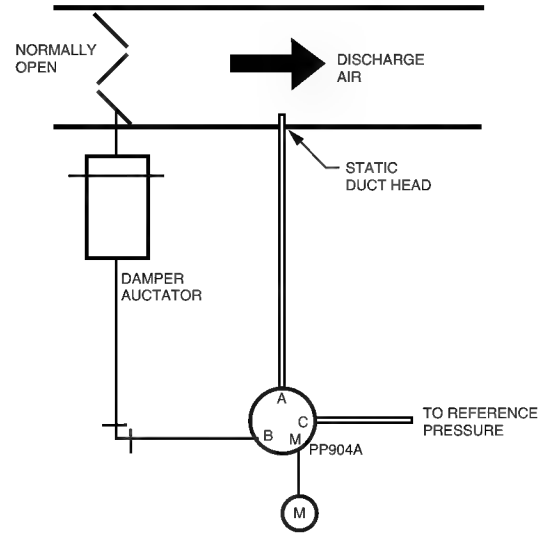


Dimension Diagram



One- or two-pipe, direct- or reverse-acting, low- or high-capacity controller used with pneumatic actuators to regulate static or differential pressure in central fan installations. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Adjustable setpoint and throttling range (Zero and span).
- Direct Acting (DA) and Reverse Acting (RA).
- Sharp-barb, push-on connectors for plastic tubing.
- Field calibration possible.



Application Type: Static or Differential Pressure

Airflow Usage: 0.022 scfm (10.0 mL/s) at 18 psi (124 kPa)

Connections: Main: Sharp-barbed fittings for 1/4 in. diameter tubing;

Branch: Sharp-barbed fittings for 5/32 in. diameter tubing.

Temperature Range: 40 F to 120 F (5 C to 50 C)

Mainline Air Pressure Max/Min: 25 psi/16 psi (175 kPa/112 kPa)

Minimum Safe Static Pressure: 28 in. wc (7 kPa)

Accessories:

14004238-001 Static Pressure Duct Head for 1/4 in., 6 mm diameter Plastic Tubing

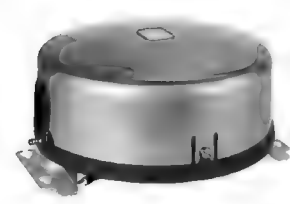
301298B

Outdoor Static Pressure Head

Product Number	Action	Approximate Throttling Range at Midscale Maximum		Pressure Range		Scale Range	
		(in. wc)	(kPa)	(in. wc)	(kPa)	(in. wc)	(kPa)
PP904A1035	Reverse Acting, Direct Acting	0.02 to 0.5 in. wc	—	Static: 28 in. wc (max)	Static: 7 kPa (max)	0 to 8 in. wc	0 to 1.7 kPa
PP904B1009	Reverse Acting, Direct Acting	0.02 to 0.5 in. wc	—	Static: 28 in. wc (max)	Static: 7 kPa (max)	0 to 8 in. wc	0 to 1.7 kPa

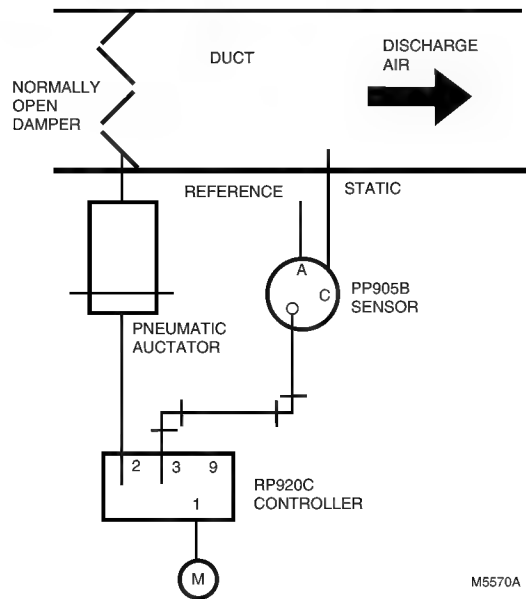
Pneumatic Controllers—Pressure

PP905 Static Pressure Sensor



One-pipe, direct-or reverse-acting pressure sensor used with RP908/RP920 Controllers to provide control of duct static, velocity, or differential pressure in airflow applications. Replacement devices available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Three-diaphragm design minimizes calibration shift with static pressure changes in velocity pressure applications.
- Not sensitive to normal supply air variations.
- Continuous static, total, velocity, or differential pressure indication available by using differential pressure gage.



Application Type: Pressure
Dimensions, Approximate: 8 in. high, 9 in. wide, 4 1/8 in. deep (203 mm high, 228 mm wide, 105 mm deep)
Airflow Usage: 0.021 cfm (9.9 ml/s)
Connections: Push-on barb for 1/4 in. (6 mm) Diameter tubing
Temperature Range: 40 F to 120 F (4 C to 50 C)
Mounting Type: Duct

Accessories:
14004238-001 Static Pressure Duct Head for 1/4 in., 6 mm diameter Plastic Tubing

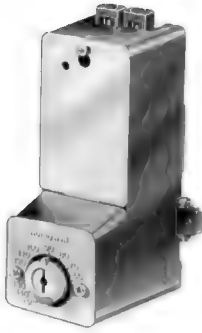
Product Number	Action	Output Pressure Range		Setpoint Range (Adjustable)*		Span (Non-adjustable)		Used With
		(psi)	(kPa)	(in. wc)	(kPa)	(in. wc)	(kPa)	
PP905B1008	Direct or Reverse	3 psi to 15 psi	21 kPa to 103 kPa	0 in. wc. to 7 in. wc.	0 kPa to 1.7 kPa	2 in. wc	0.5 kPa	RP908, RP920

*Setpoint Range determines mid point of range. Factory setpoint is 1 in. wc (0.25 kPa, Direct Acting))

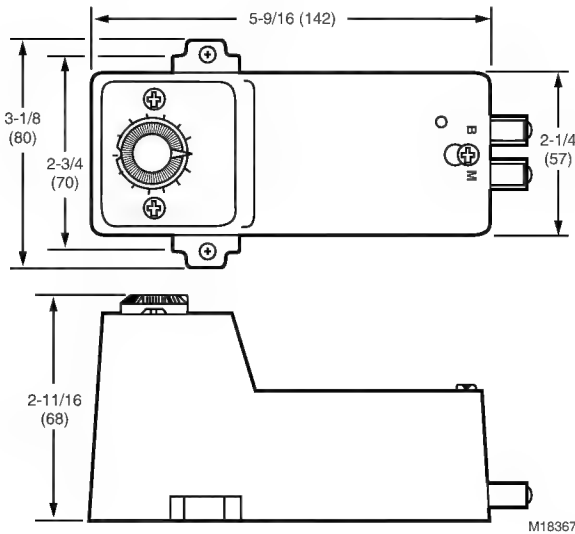
Pneumatic Pressure Controller Accessories and Replacement Parts

OS Number	Description	Used With
14004238-001	Static Pressure Duct Head for 1/4 in., 6 mm diameter Plastic Tubing	PP904, PP905
301298B	Outdoor Static Pressure Head	PP904

LP920 Remote Bulb Temperature Controllers

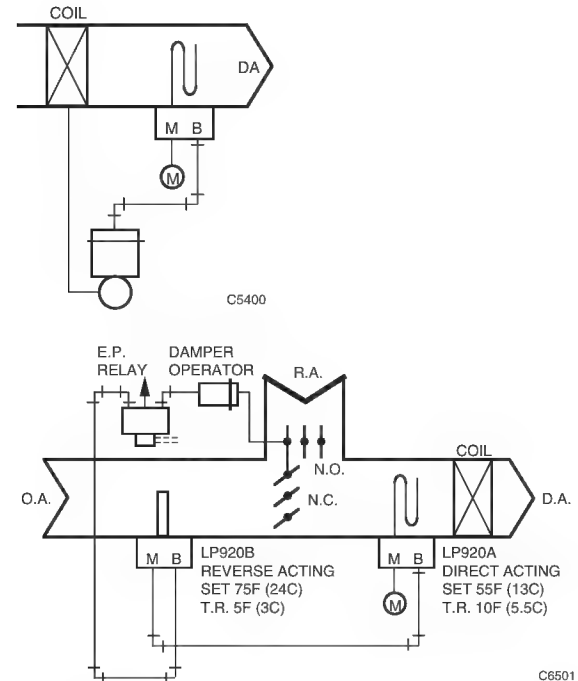


Dimension Diagram



Two-pipe, single temperature, pneumatic temperature controller used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic temperature controller.

- Fahrenheit or Celsius scales for all adjustments.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Adjustable setpoint and throttling ranges.
- Scales in bold type for high visibility.
- Replaceable filter cartridge.
- Single point or averaging elements.



Airflow Usage: 0.011 scfm (5.2 mL/s)

Operating Temperature Range: Element: 230 F, Controller: 150 F
Element: 110 C, Controller: 66 C

Maximum Storage Temperature: 150 F (66 C)

Maximum Operating Pressure: 30 psi (207 kPa)

Throttling Range: Factory set at 10 F with adjustment range of 5 to 25 F (Factory set at 6C with adjustment range of 3 to 15 C)

Remote Bulb Sensor: yes

Accessories:

315904B Well, 7 5/16 in., 186 mm, stainless steel, 1/2 in. NPT

315046B Well, 1/2 NPT Copper, 7 1/2 in. (191 mm) long

Replacement Parts:

14001865-001 Filter Cartridge Assembly

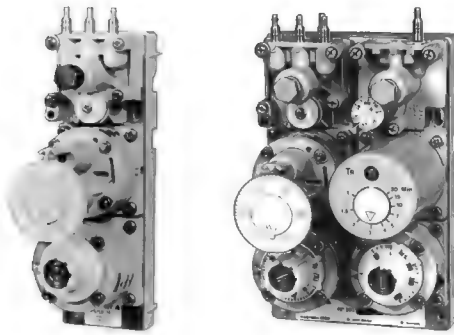
14002172-001 Gage Tap repair Plug

Product Number	Application Type	Action	Number of Pipes	Scale Range*		Includes
				(F)	(C)	
LP920A1005	Remote Bulb Temperature	Direct Acting	2	30 to 150 F	-1 to +66 C	8 ft (2.4 m) averaging element for duct mounting
LP920A1013	Remote Bulb Temperature	Direct Acting	2	30 to 150 F	-1 to +66 C	3/8 in. diameter x 5 1/4 in. long (10 mm diameter x 133 mm long) bulb with 3 in. (76 mm) capillary, well mount
LP920A1021	Remote Bulb Temperature	Direct Acting	2	30 to 150 F	-1 to +66 C	3/8 in. diameter x 5 1/4 in. long (10 mm diameter x 133 mm long) bulb with 10 in. (254 mm) capillary, integral duct mount
LP920A1039	Remote Bulb Temperature	Direct Acting	2	30 to 150 F	-1 to +66 C	3/8 in. diameter x 5 1/4 in. long (10 mm diameter x 133 mm long) bulb with 5 ft. (1.5 m) capillary, remote duct mount
LP920B1037	Remote Bulb Temperature	Reverse Acting	2	30 to 150 F	-1 to +66 C	3/8 in. diameter x 5 1/4 in. long (10 mm diameter x 133 mm long) bulb with 5 ft. (1.5 m) capillary, remote duct mount

* Scale plate is reversible for F and C applications

Pneumatic Controllers—Temperature

RP920 Pneumatic Controller

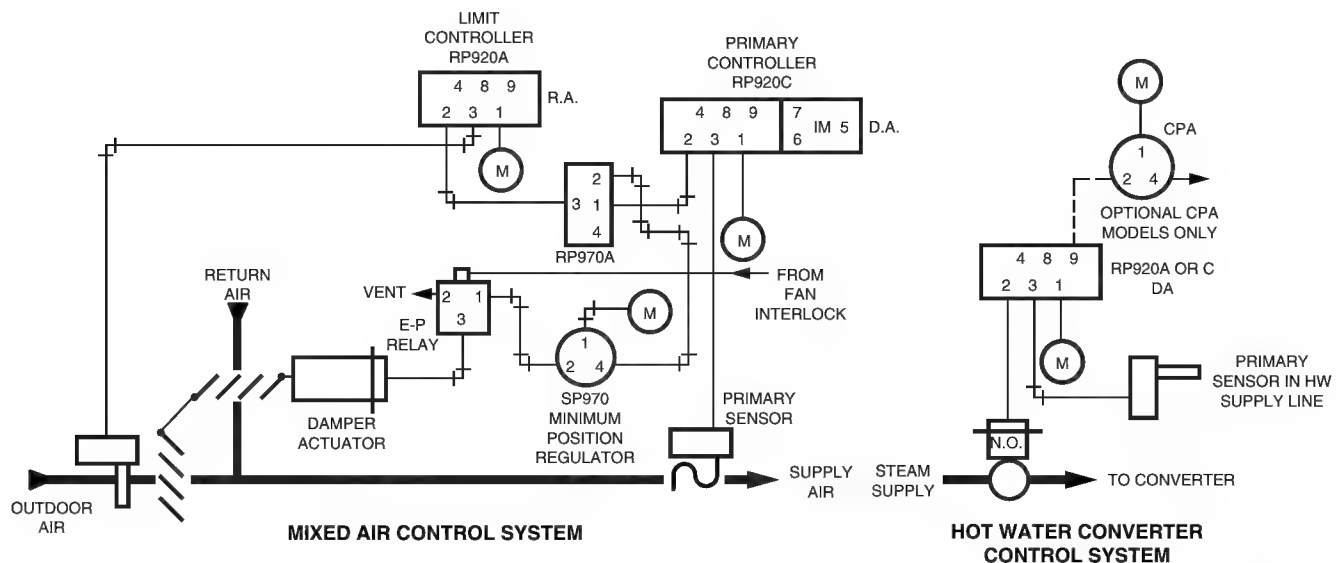
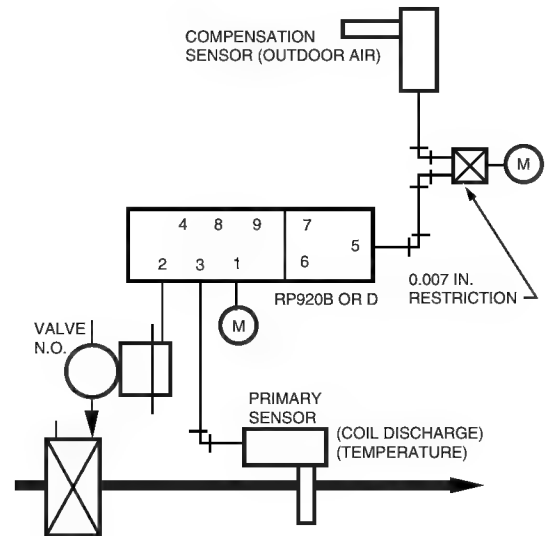
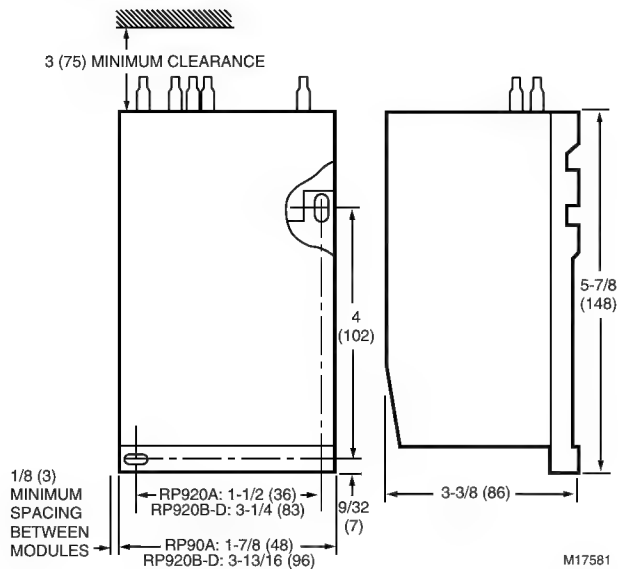


Proportional, high capacity, single or dual input pneumatic controller used in conjunction with remote sensors to provide proportional (P) or proportional plus integral (P+I) control of temperature, humidity, pressure, or dewpoint for heating and air conditioning systems.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell controllers.

- Proportional plus integral control option minimizes offset.
- Miniature diaphragm technology provides high degree of accuracy and reliability.
- Direct Acting models can be converted to Reverse Acting (RA) function in field.
- Field adjustable compensation start point.
- Local or remote setpoint field option.
- Integral action cut-off provides trouble-free automatic startup.
- Transparent cover (optional) provides protection while allowing easy reading of settings and gages.
- Corrosion resistant construction.

Dimension Diagram



Pneumatic Controllers—Temperature

Temperature Range: 40 F to 130 F (4 C to 54 C)

Airflow Usage: 0.07 scfm with 1 psi pressure drop at 18 psi main air supply. (33.0 mL/s with 7 kPa pressure drop at 124 kPa main air supply.)

Input Signal: 3 to 15 psi (21 to 103 kPa)

Output Signal: 3 to 13 psi (21 to 90 kPa)

Main Line Pressure Range: 17 to 30 psi (117 to 207 kPa)

Accessories:

14003755-001 Barb fitting for port 4,6,7, or 8 for all RP920

305965 Pressure Gage 0 to 30 psi, 1 1/2 in. 1/8 NPT center back

305929 Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature -40 to 160F

305930 Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature 0 to 200F

14000786-001 25 F-125 F scale 1 1/2 in. Diameter Receiver gauge for RP920 and RP908 with 1/8 in. NPT connection

305986 GAUGE -20 -80 F 15W 1005H 01B XAPZQ 12#4755

305931 Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature 40 to 240F

14000786-003 15 to 75% RH gauge

14000786-005 GAUGE

14000786-004 GAUGE

305616 Receiver Gage, 1 1/2 in. 1/8 NPT center back, Pressure 0 to 2 in WC

43188057-010 Clear plastic cover for all RP920A pneumatic controllers

43188123-010 Clear plastic cover for all RP920B, RP920C, RP920D pneumatic controllers

14004263-001 Thread forming metric screw, mount modules to manifold

14004322-001 DIN RAIL MOUNT

14004267-002 Static pressure scaleplate insert for setpoint knob for all RP920

315161A Needle Adapter Fitting for Branchline Test Gage

14000786-002 Gauge (Pressure), 1 1/2inch dial diameter

14505694-003 350 mm Honeywell for RP920

14505694-004 450 mm Honeywell for RP920

Replacement Parts:

14004276-002 Proportional module with gasket for RP920

14004277-003 Setpoint module with gasket with CPA for RP920

14004278-002 Compensation module with gasket for RP920B and RP920D

14004283-003 Switch block module with gasket for RP920C

14004533-001 Connector block with gasket and CPA for RP920

14004290-002 BAG ASSEMBLY-SCREWS

43915905-110 O-ring for filter in RP920

14002172-001 Gage Tap repair Plug

14001865-001 Filter Cartridge Assembly

14003757-001 Seal screw for port 8 and O-ring repair parts for RP920

43188059-001 Setpoint knob for all RP920 pneumatic controllers

14004267-001 Temperature and Humidity scaleplate insert for setpoint knob for all RP920

Product Number	Application Type	Action*	Capacity**	Number of Sensors	Includes
RP920A1025	Proportional pneumatic controller	Direct Acting	0.021 scfm (10 mL/s)	single	With remote control point adjustment capability.
RP920A1033	Proportional pneumatic controller	Direct Acting	0.021 scfm (10 mL/s)	single	Without remote control point adjustment capability.
RP920B1023	Proportional pneumatic controller	Direct Acting	0.046 scfm (21.7 mL/s)	dual	With remote control point adjustment capability.
RP920B1031	Proportional pneumatic controller	Direct Acting	0.046 scfm (21.7 mL/s)	dual	Without remote control point adjustment capability.
RP920C1021	Proportional plus integral pneumatic controller	Direct Acting	0.021 scfm (10 mL/s)	single	With remote control point adjustment capability.
RP920C1039	Proportional plus integral pneumatic controller	Direct Acting	0.021 scfm (10 mL/s)	single	Without remote control point adjustment capability.
RP920D1029	Proportional plus integral pneumatic controller	Direct Acting	0.046 scfm (21.7 mL/s)	dual	With remote control point adjustment capability.

* Direct Acting models can be converted to Reversing Acting in the field.

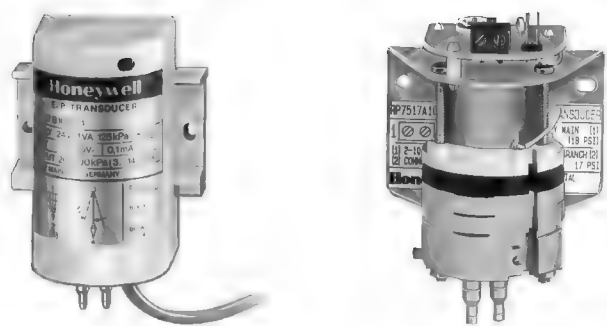
** at 18 psi (124 kPa) MLP and 8.5 psi (59 kPa) BLP (does not include sensor usage)

Replacement Parts

OS Number	Description	Used With
14003657-001	Replacement main flash plate	LP920
14000786-002	Gauge (Pressure), 1 1/2inch dial diameter	RP908A, RP908B
14004263-001	Thread forming metric screw Screw-metric thread forming	RP920
14004286-002	Zinc plated metric machine screw, M3x0.5., 19 min., 26 - 0.8	RP920
14003469-001	Replacement Diaphragm	RP980
14505694-002	225 mm Honeywell for RP920	RP920
14505694-003	350 mm Honeywell for RP920	RP920
14505694-004	450 mm Honeywell for RP920	RP920

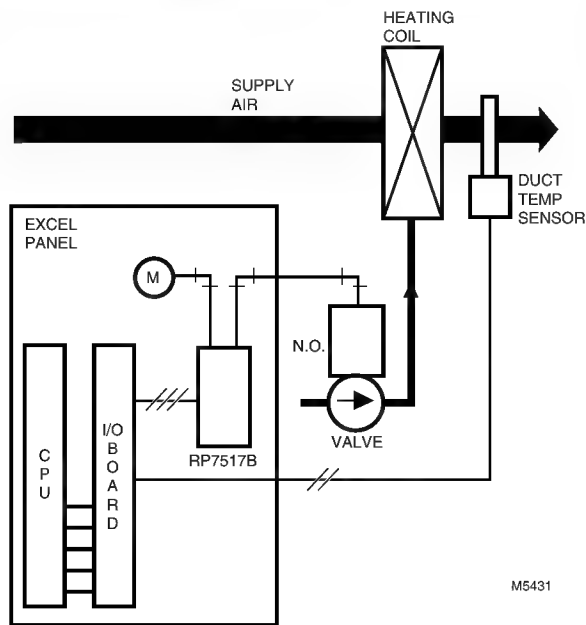
Pneumatic Controllers—Temperature

RP7517 Electronic-Pneumatic Transducer



Electronic-Pneumatic Transducers are used in electronic-pneumatic control systems to convert a proportional electric output signal from a controller into a direct-acting, proportional pneumatic signal.

- Screw mounting or snap rail (models with cover).
- Factory calibrated.
- Dual barb fittings.
- High accuracy.



Application Type: Electric to pneumatic Transducer

Action: Direct Acting

Airflow Usage: 0.025 scfm (117mL/s)

Connections: Dual barb-fittings for 1/4 in. or 5/32 in. O.D.

Currents: 16 mA

Operating Temperature Range: 131 F (55 C)

Maximum Operating Pressure: 30 psi (205 kPa)

Nominal High End: 16 psi with 18 psi main pressure at 12 Vdc or 16 psi at 11 Vdc (min.) (116 kPa with 125 kPa main pressure at 12 Vdc or 110 kPa at 11 Vdc (min.))

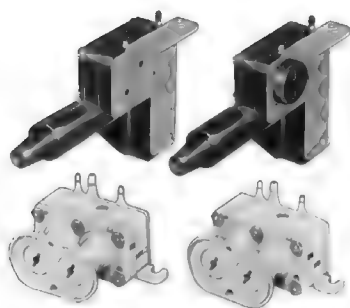
Nominal Low End: 0.5 psi at 0 Vdc (3.5 kPa at 0 Vdc)

Output Pressure Range: 3 to 15 psi (21 to 103 kPa)

Voltage: 24 Vac

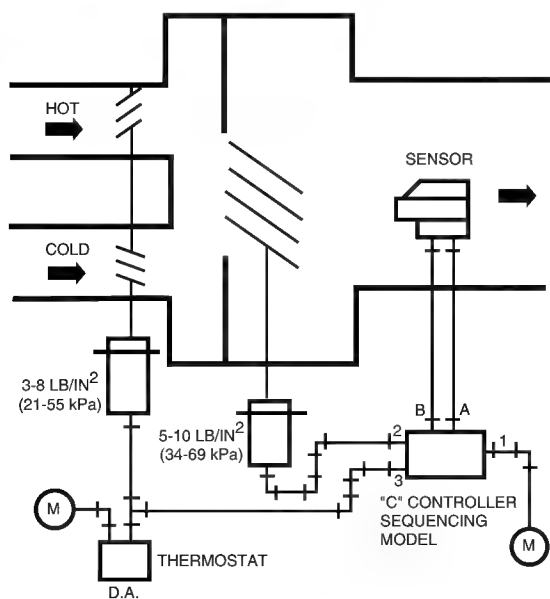
Product Number	Electrical Connections	Dimensions, Approximate		Input Signal	Capacity	Description	Includes
		(inch)	(mm)				
RP7517B1024	screw terminals for 14 to 22 gage wire	2 7/16 in. wide, 3 3/8 in. high, 1 7/8 in. deep	62 mm wide, 86 mm high, 48 mm deep	2 to 10 Vdc at 0.1 mA max	0.45 scfm (211 mL/s)	Electronic/Pneumatic Transducer, Action: Direct	Without cover, external transformer required, 24 Vac, 50/60 Hz, (3 wire)
RP7517B1016	30 in. leadwires (762 mm)	2 7/16 in. wide, 3 5/8 in. high, 2 in. deep	62 mm wide, 92 mm high, 52 mm deep	2 to 10 Vdc at 0.1 mA max	0.45 scfm (211 mL/s)	Electronic/Pneumatic Transducer, Action: Direct	With cover, external transformer required, 24 Vac, 50/60 Hz, (3 wire)
RP7517A1017	screw terminals for 14 to 22 gage wire	2 7/16 in. wide, 3 3/8 in. high, 1 7/8 in. deep	62 mm wide, 86 mm high, 48 mm deep	2 to 10 Vdc	0.45 scfm (211 mL/s)	Electronic/Pneumatic Transducer, Action: Direct	Without cover, without internal power supply for panel mounting (2 wire)
RP7517A1009	30 in. (762 mm) lead wire	2 7/16 in. wide, 3 5/8 in. high, 2 in. deep	62 mm wide, 92 mm high, 52 mm deep	2 to 10 Vdc	0.45 scfm (211 mL/s)	Electronic/Pneumatic Transducer, Action: Direct	With cover, without internal power supply (2-wire)

CP980 Velocitrol Velocity Sensor/Controller

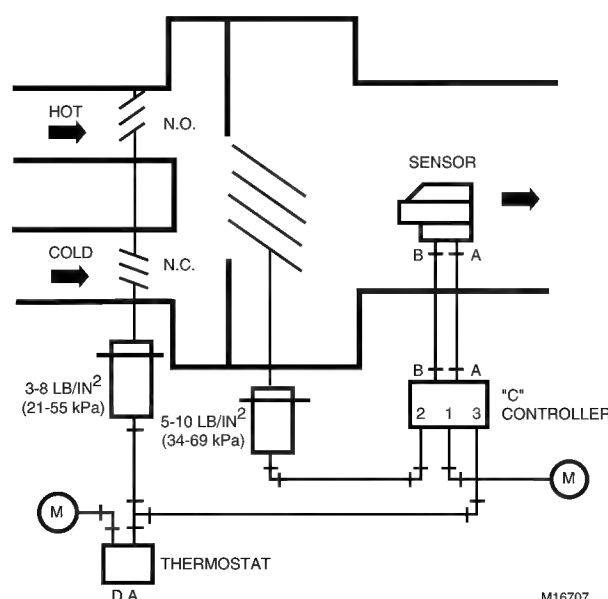


An ultra-sensitive air velocity sensor and pneumatic controller, control pneumatic damper actuators in heating and air conditioning systems to provide constant air velocity in the duct regardless of the static pressure.

- State-of-the-art design provides reliable operation.
- Not position sensitive.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Insensitive to static pressure changes.
- Accurate control throughout entire velocity range.
- Graduated scales for minimum and maximum velocity adjustments.
- Velocity reset by thermostat demand.
- Adaptable to many terminal unit control strategies.



M16706



M16707

Dimensions, Approximate: Controller: 1 3/4 in. high, 3 1/4 in. wide, 2 3/8 in. deep / Sensor: 3 3/16 in. high, 1 3/4 in. wide, 4 3/16 in. long with orifice and 3 3/8 in. long without orifice. (Controller: 44 mm high, 83 mm wide, 60 mm deep / Sensor: 81 mm high, 45 mm wide 107 mm long with orifice and 86 mm long without orifice.)

Action: Direct, non-sequencing, normally open Application Type Velocitrol Air Velocity Sensor B Type

Airflow Usage: 0.029 scfm (13.7 mL/s), includes supply for bleed type thermostats for type B, does not include thermostat air for type C controller

Maximum Operating Pressure: 30 psi (207 kPa)

Pressure Range: 18 to 20 psi (124 to 138 kPa)

Temperature Range: 40 to 130 F (5 to 55 C)

Product Number	Remote Sensor	Control Range		Transmitter Range		Description	Comments
		(fpm)	(m/s)	(psi)	(kPa)		
CP980C1065	Yes	500 fpm up to 3500 fpm by changing orifice	2.5 m/s up to 17.8 m/s by changing orifice	1 to 15 psi	7 to 103 kPa	Pneumatic Velocity Controller, number of pipes:1, Action: Direct, normally open	For normally closed damper and one-pipe thermostat
CP980D1063	Yes	500 fpm up to 3500 fpm by changing orifice	2.5 m/s up to 17.8 m/s by changing orifice	1 to 15 psi	7 to 103 kPa	Pneumatic Velocity Controller, number of pipes:1, Action: Reverse, normally closed	For normally open damper and two-pipe thermostat
CP980E1060	Yes	500 fpm up to 3500 fpm by changing orifice	2.5 m/s up to 17.8 m/s by changing orifice	9 to 15 psi	62 to 103 kPa	Pneumatic Velocity Controller, number of pipes:2, Action: Direct, normally open	For normally closed damper and two-pipe thermostat
CP980F1068	Yes	500 fpm up to 3500 fpm by changing orifice	2.5 m/s up to 17.8 m/s by changing orifice	9 to 15 psi	62 to 103 kPa	Pneumatic Velocity Controller, number of pipes:2, Action: Direct, normally closed	For normally closed damper and two-pipe thermostat

Pneumatic Controllers—Velocity

CP980C,D,E, and F Cross-Reference Table

Current Order Number (Less Orifice)	Orifice Order No.	Velocity Range ft/min (m/s)	Orifice Set	Replaces Honeywell		
				Original Set Less Orifice	Interim Matched Set (Less Orifice)	Matched Set (Includes Orifice)
CP980C1065	None	500 (2.5)	None	—	—	—
	14003642-001	1250 (6.4)	Red			CP980C1008
	14003642-002	750 (3.8)	Green			CP980C1016
	14003642-003	1500 (7.6)	White			CP980C1024
	14003642-004	2000 (10.2)	Blue			CP980C1032
	14003749-001	2500 (12.7)	Black			CP980C1040
	14003749-002	3500 (17.8)	Gray			CP980C1057
CP980D1063	None	500 (2.5)	None	CP980A1002/ RP980A1006 or CP980A1002/ RP980B1004 CP980A1010/ RP980A1006 or RP980A1010/ RP980B1004	CP980B1000 or CP980B1018 CP980B1034	—
	14003642-001	1250 (6.4)	Red			CP980D1006
	14003642-002	750 (3.8)	Green			CP980D1014
	14003642-003	1500 (7.6)	White			CP980D1022
	14003642-004	2000 (10.2)	Blue			CP980D1030
	14003749-001	2500 (12.7)	Black			CP980D1048
	14003749-002	3500 (17.8)	Gray			CP980D1055
CP980E1060	None	500 (2.5)	None	—	—	—
	14003642-001	1250 (6.4)	Red			CP980E1003
	14003642-002	750 (3.8)	Green			CP980E1011
	14003642-003	1500 (7.6)	White			CP980E1029
	14003642-004	2000 (10.2)	Blue			CP980E1037
	14003749-001	2500 (12.7)	Black			CP980E1045
	14003749-002	3500 (17.8)	Gray			CP980E1052
CP980F1068	None	500 (2.5)	None	CP980A1002/ RP980C1002 CP980A1010/ RP980C1002 ^a	CP980B1026 CP980B1059 ^a	—
	14003642-001	1250 (6.4)	Red			CP980F1001
	14003642-002	750 (3.8)	Green			CP980F1019
	14003642-003	1500 (7.6)	White			CP980F1027
	14003642-004	2000 (10.2)	Blue			CP980F1035
	14003749-001	2500 (12.7)	Black			CP980F1043
	14003749-002	3500 (17.8)	Gray			CP980F1050

Pneumatic Velocity Control Accessories

OS Number	Description	Used With
14003642-001	Orifice Red, Velocity Range 1250 ft/min (6.4 m/s)	CP980
14003642-002	Orifice Green, Velocity Range 750 ft/min (3.8 m/s)	CP980
14003642-003	Orifice White Velocity Range 1500 ft/min (7.6 m/s)	CP980
14003642-004	Orifice Blue Velocity Range 2000 ft/min (10.2 m/s)	CP980
14003749-001	Orifice Black, Velocity Range 2500 ft/min (12.7 m/s)	CP980
14003749-002	Orifice Gray, Velocity Range 3500 ft/min (17.8 m/s)	CP980
14003749-003	Orifice Yellow	CP980
315242	Knob Assembly, RP908	RP908
315245	Screen, RP908	RP908, RP908
315993A	Scaleplate assembly, RP908	RP908, RP908
316155A	Cover Assembly, RP908	RP908, RP908
316479A	Spring Assembly, RP908	RP908, RP908

Replacement Parts

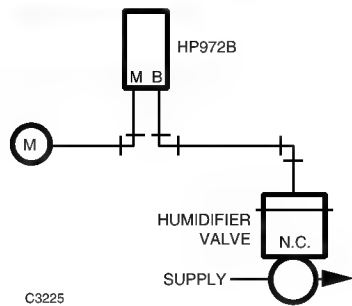
OS Number	Description	Used With
14003882-001	Direct Acting Velocitrol sensor plate assembly including Base plate (14003480-001), Diaphragm (14003504-001), top plate assembly (14003525-002), gasket (14003885-001), valve plate assembly (14003897-001), knob (14003886-001), diaphragm (14003886-001)	RP908; CP980E, CP980C
14003931-006	Stainless steel SCCM flow Restriction of 120-160 at 100 kPa	CP980C, CP980E, CP980C
14004176-001	Air check Valve assembly including Base & pipe assembly (14004126-001), valve cup (14004090-001), Membrane (14004092-001), protective cover (14004091-001), Gasket (14004093-001), and Label (14004177-001)	CP981
14004305-001	Decorative cover	CP981, CP983

Pneumatic Controller Accessories

OS Number	Description	Used With
14003469-002	Diaphragm, RP980	CP980
14003617-002	Velocitrol Supply, RP980	RP980
14000786-001	25 F-125 F scale 1 1/2 in. Diameter Receiver gauge for RP920 and RP908 with 1/8 in. NPT connection	—
14000786-003	Gauge	—
14000786-004	Gauge	—
14000786-005	Gauge	—
14002696-001	Repair kit including filters, screens, washers, gaskets, O-rings, and restrictors for RP908A and RP908B controllers	RP980
14003755-001	Barb fitting for port 4,5,7, or 8 for all RP920	RP980
14003757-001	Seal screw for port 8 and O-ring repair parts for RP920	CP980
14003791-001	Spring Stop Top	HP973
14004267-001	Temperature and Humidity scaleplate insert for setpoint knob for all RP920	—RP920
14004267-002	Static pressure scaleplate insert for setpoint knob for all RP920	RP920
14004276-002	Proportional module with gasket for RP920	RP920
14004277-003	Setpoint module with gasket with CPA for RP920	RP920
14004278-002	Compensation module with gasket for RP920B and RP920D	RP920
14004283-003	Switch block module with gasket for RP920C	RP920
14004290-002	Bag Assembly-screws	RP920
14004316-001	Cover Assembly for CP983A.	CP983
14004322-001	Din Rail Mount	—
14004325-001	Connector plate assembly used on LP920	—
14004533-001	Connector block with gasket and CPA for RP920	RP920
14004533-002	Connector block with gasket without CPA for RP920	RP920
309379	Screen LP914	LP914
309387	Filter Assembly,	—
316297	Hanger	LP916
316732	Knob,	LP916
43188057-010	Clear plastic cover for all RP920A pneumatic controllers	RP920
43188059-001	Setpoint knob for all RP920 pneumatic controllers	RP920
43188123-010	Clear plastic cover for all RP920B, RP920C, RP920D pneumatic controllers	RP920
43915905-110	O-ring for filter in RP920	RP920
314820	Restrictor Plate	LP913

Pneumatic Humidistats

HP970 Pneumatic Humidistat



Two-pipe, single setpoint, pneumatic humidistat used to provide proportional control of pneumatic valves on humidification or dehumidification systems.

- Durable HP970 series humidistat.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Vertical or horizontal mounting.
- Backplate has molded air connections; no separate fittings needed.
- Variety of cover finishes and display styles available.

Application Type: Humidity

Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep
(83 mm high, 51 mm wide, 41 mm deep)

Airflow Usage: 0.011 scfm (5.2 mL/s)

Operating Temperature Range: 45 F to 125 F (7 C to 52 C)

Maximum Storage Temperature: -30 to +150 F (-34 to +66 C)

Maximum Operating Pressure: 25 psi (170 kPa)

Throttling Range (%RH): 3 to 15% RH

Accessories:

14002362-001 Duct Sampling Chamber

14002430-001 Thermostat Guard

AK3863 Honeywell Thermostat Tool Kit, TP970/TP900

CCT729A Gage Adapter for Calibration. Add 305965 0 to 30 psi Gage for Complete Tool.

CCT735A Thermostat Calibration Tool includes Allen wrench for cover installation.

Replacement Parts:

14001865-001 Filter Cartridge Assembly

14002374-004 Restrictor Block Assembly

14004419-001 Restrictor Block Gasket

Product Number	Action	Number of Pipes	Scale Range (%RH)	Setpoint	Description	Comments
HP970A1009	Direct Acting	2	15 to 75% RH	Single	Pneumatic Humidity Controller, number of pipes:2, Action: Direct	Order Cover Separately
HP970B1007	Reverse Acting	2	15 to 75% RH	Single	Pneumatic Humidity Controller, number of pipes:2, Action: Reverse	Order Cover Separately
HP970B1015	Reverse Acting	2	65 to 95% RH	Single	Pneumatic Humidity Controller, number of pipes:2, Action: Reverse	Order Cover Separately

HP972 Pneumatic Humidistat



A proportioning pneumatic humidistat used on one- or two-pipe installations for controlling actuators on valves and dampers in air conditioning systems for humidification or dehumidification control

- Durable HP970 series humidistat.
- Snap-on mounting to backplate.
- Vertical or horizontal mounting.
- Backplate has molded air connections; no separate fittings needed.
- Variety of cover finishes and display styles available.
- Wide throttling range.

Application Type: Humidity

Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep (83 mm high, 51 mm wide, 41 mm deep)

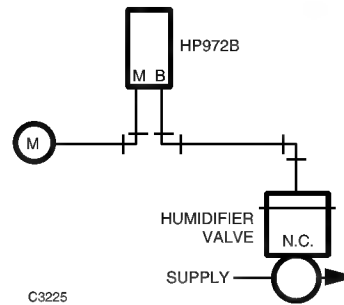
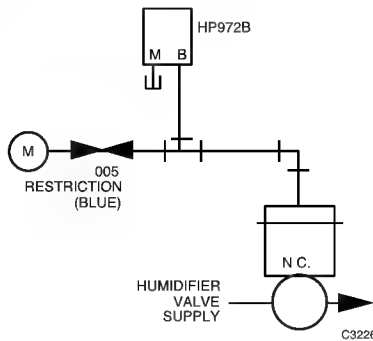
Airflow Usage: 0.011 scfm (5.2 mL/s)

Operating Temperature Range: 45 F to 125 F (7 C to 52 C)

Maximum Storage Temperature: -30 to +150 F (-34 to +66 C)

Maximum Operating Pressure: 25 psi (170 kPa)

Throttling Range (%RH): 7 to 35% RH



Product Number	Action	Number of Pipes	Scale Range (%RH)	Setpoint	Description	Comments
HP972B1005	Reverse Acting	1 or 2	15 to 75% RH	Single	Pneumatic Humidity Controller, number of pipes: 1 or 2, Action: Reverse	Order Cover Separately

Replacement Parts

OS Number	Description	Used With
14002496-001	Nylon element assembly, with Spring	HP970A, HP970B
14002496-003	Nylon element assembly, with Spring	HP972B
14002594-001	Setpoint Knob Assembly	HP972B, HP970A, HP970B, HP972B
14002641-001	Scale Plate assembly, 15 to 75% RH	Setpoint knob assembly, HP970A, HP970B, HP972B
14003659-001	Stainless steel plate-guard	

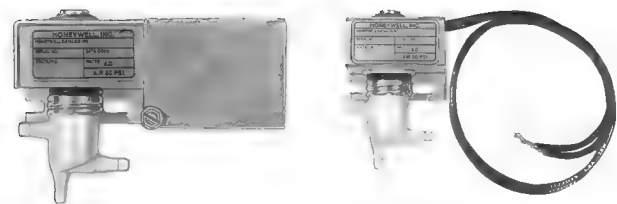
Accessories

OS Number	Description	Used With
14004406-424	Thermostat Cover assembly satin chrome with -cover [chrome] (14004402-001), cover insert, setpoint (14004438-001), cover insert Day-Auto (14004437-001), Window thermostat (14004405-017) Horizontal mount, setpoint slot closed, setpoint display 15-75% RH	Scale Plate assembly, 15%-75% RH, HP970A, HP970B, HP972B
14004406-124	Humidistat Cover Kit - Satin Chrome for Vertical Mount. Setpoint display Setpoint slot open, Scale range 20 to 70.	HP970, HP971



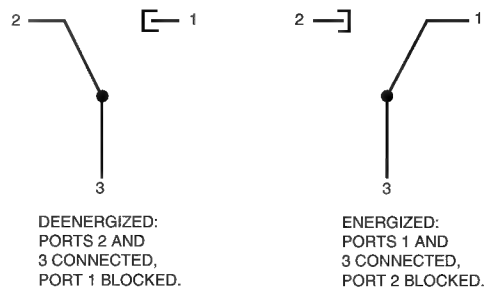
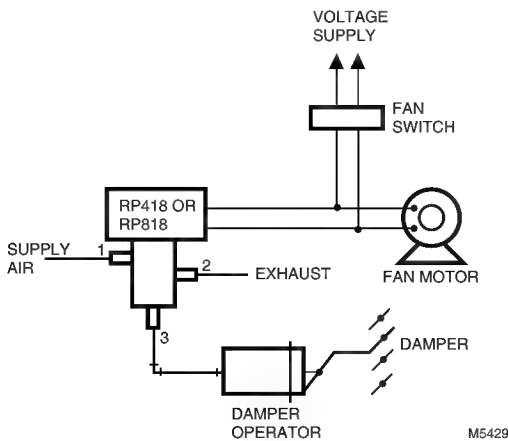
Pneumatic Relays and Switches

RP418 Electric/Pneumatic Relay



Electrically operated pneumatic switches used to interlock an electrical system and a pneumatic control system. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Usable as a diverting relay, a selector relay, or a stop and bleed relay.
- Mount and operate in any position.
- Available with lead wires or junction box.
- Line or low voltage models available.

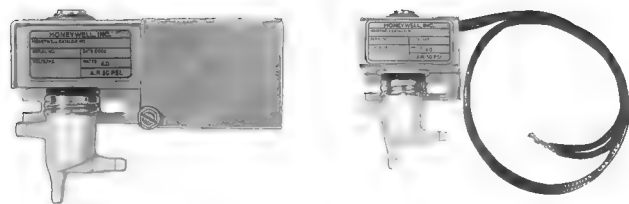


Dimensions, Approximate: 2 7/8 in. high, 3 13/16 in. wide, 1 1/4 in. deep (73 mm high, 97 mm wide, 32 mm deep)
Airflow Usage: 0.42 scfm (200 mL/s) at 20 psi (138 kPa) supply with 1 psi (7 kPa) pressure drop
Air Connections: Barb for 1/4 in. (6 mm) plastic tubing
Capacity: 0.075 Cv minimum
Type: Electric / Pneumatic Relay
Maximum Operating Pressure: 50 psi (340 kPa)

Operation: Energized: ports 1 and 3 connected, port 2 blocked
De-energized: ports 2 and 3 connected, port 1 blocked
Temperature Range: 0 to 100 F (-18 to 38 C)
Approvals:
Canadian Underwriters Laboratories, Inc: Listed: File No. LR50900
Underwriters Laboratories, Inc: Listed: Guide Y10Z
Component Recognized File: MP1502, Vol. 11, Sec. 1

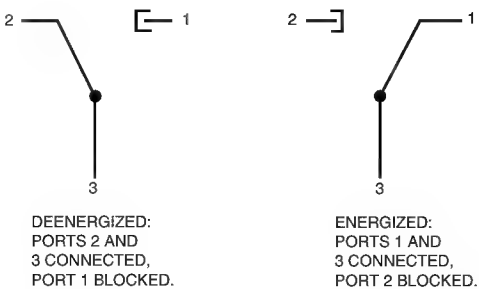
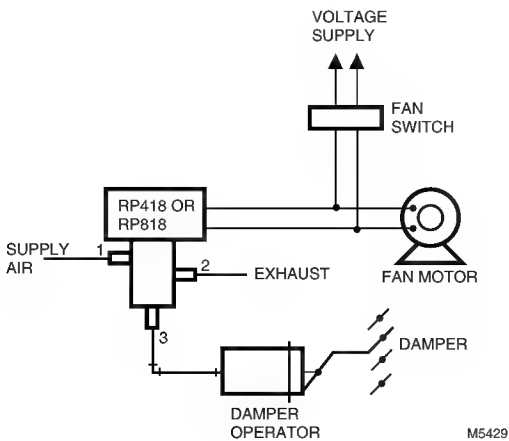
Product Number	Voltage	Mounting Type	Electrical Connections	Includes
RP418A1008	200 Vac, 208 Vac	Surface	Junction Box and 15 in. (380 mm) leads	Junction box
RP418A1057	120 Vac	Surface	Junction Box and 15 in. (380 mm) leads	Junction box
RP418A1065	480 Vac (60 Hz), 440 Vac (50 Hz)	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418A1073	277 Vac	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418A1081	208 Vac	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418A1099	240 Vac	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418A1107	120 Vac	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418A1115	277 Vac 575 Vac	Surface	Junction Box and 15 in. (380 mm) leads	—
RP418B1014	208 Vac	Panel	15 in. (380 mm) leads	—
RP418B1022	240 Vac	Panel	15 in. (380 mm) leads	—
RP418B1030	120 Vac	Panel	15 in. (380 mm) leads	—
RP418B1048	480 Vac (60 Hz), 440 Vac (50 Hz)	Panel	15 in. (380 mm) leads	—
RP418B1055	208 Vac	Panel	15 in. (380 mm) leads	—
RP418B1071	120 Vac	Panel	15 in. (380 mm) leads	—
RP418B1089	575 Vac	Panel	15 in. (380 mm) leads	—

RP818 Electric/Pneumatic Relay



Electrically operated pneumatic switches used to interlock an electrical system and a pneumatic control system. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Usable as a diverting relay, a selector relay, or a stop and bleed relay.
- Mount and operate in any position.
- Available with lead wires or junction box.
- Line or low voltage models available.



M5428

Dimensions, Approximate: 2 7/8 in. high, 1 3/4 in. wide, 1 1/4 in. deep (73 mm high, 44 mm wide, 32 mm deep)

Airflow Usage: 0.42 scfm (200 mL/s) at 20 psi (138 kPa) supply with 1 psi (7 kPa) pressure drop

Air Connections: Barb fittings for 1/4 in. (6 mm) plastic tubing

Capacity: 0.075 Cv minimum

Frequency: 60 Hz

Type: Electric / Pneumatic Relay

Maximum Operating Pressure: 50 psi (340 kPa)

Operation: Energized: ports 1 and 3 connected, port 2 blocked

De-energized: ports 2 and 3 connected, port 1 blocked

Temperature Range: 0 to 100 F (-18 to 38 C)

Approvals:

Canadian Underwriters Laboratories, Inc: Listed: File No. LR50900

Underwriters Laboratories, Inc: Listed: Guide Y10Z

Component Recognized File: MP1502, Vol. 11, Sec. 1

Product Number	Voltage	Mounting Type	Electrical Connections	Description
RP818B1002	24 Vac	Panel	15 in. (380 mm) leads	Electric / Pneumatic Relay, Panel Mount

Pneumatic Relays and Switches

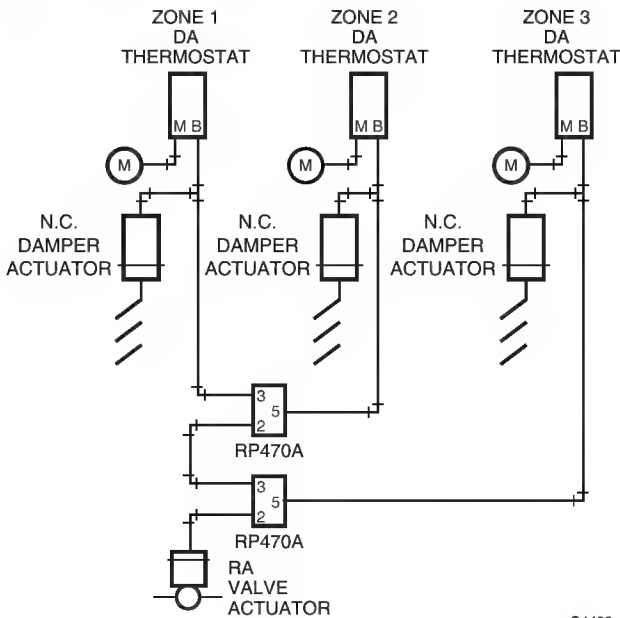
RP470 Pneumatic Selector Relay



Three-port relays used in HVAC systems to perform a variety of relay functions; transmit the higher of two input signals, lock out one pressure signal when a second signal is higher, or transmit the lower of two pressure signals.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Uses diaphragm-logic technology.
- In-line, wall, or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.



Dimensions, Approximate: 1 1/2 in. diameter, 1 in. deep
(38 mm diameter, 25 mm deep)

Air Connections: Barb for 5/32 in. (4 mm) O.D. plastic tubing

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Operating Pressure Range: 0 to 18 psi (0 to 125 kPa)

Maximum Operating Pressure: 30 psi (205 kPa)

Operation: Higher-of-two-pressures selector relay

Temperature Range: 0 F to 140 F (-18 C to +60 C)

Type: Pneumatic Three-port Selector Relay

Product Number	Mounting Type	Description	Includes
RP470A1003	Panel, Wall, In-line	Pneumatic Three-port Selector Relay, In-line, Wall, Panel Mount	14003030-001—1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP470B1001	Panel, Wall, In-line	Repeater Relay, use with two-pipe Capacity-type thermostat and Type B controller	14003030-001—1 1/2 in. Mounting Clip for Mounting relay to wall or panel

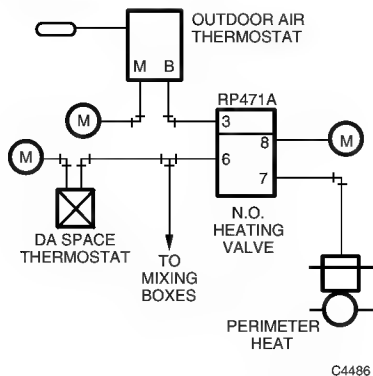
RP471 Snap-Acting Pneumatic Relay



The four port, snap acting relay converts a proportional air pressure change from a controller to a positive (two-position) pressure change. It can also divert a supply line to one of two branches.

Replacement device is available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Manually adjustable switching pressure.
- Sharp barb connections for 5/32 inch (4 mm) O.D. plastic tubing.
- Molded plastic construction with neoprene diaphragms and stainless steel lever.
- Mounts in any position with mounting clip.



Dimensions, Approximate: 1 1/2 in. Diameter, 2 3/4 in. deep, (38 mm diameter, 70 mm deep)

Air Connections: Barb for 5/32 in. (4 mm) O.D. plastic tubing

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Maximum Operating Pressure: 30 psi (205 kPa)

Setpoint: Adjustable between 3 to 15 psi (21 to 103 kPa)

Nominal Switch Differential: 0.5 psi (3 kPa)

Capacity: 0.039 scfm at 1 psi Differential (18 mL/s at 5 kPa Differential)

Operation: Proportional to 2-position converter

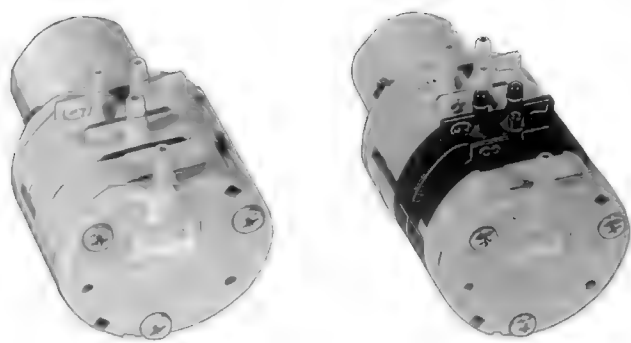
Type: Pneumatic, four-port, snap acting relay

Temperature Range: 0 F to 140 F (-18 C to +60 C)

Product Number	Mounting Type	Description	Includes
RP471A1002	Panel or Wall	Panel or wall Mount Pneumatic, four-port, snap acting, SPDT	14003030-001—1 1/2 in. Mounting Clip for Mounting relay to wall or panel

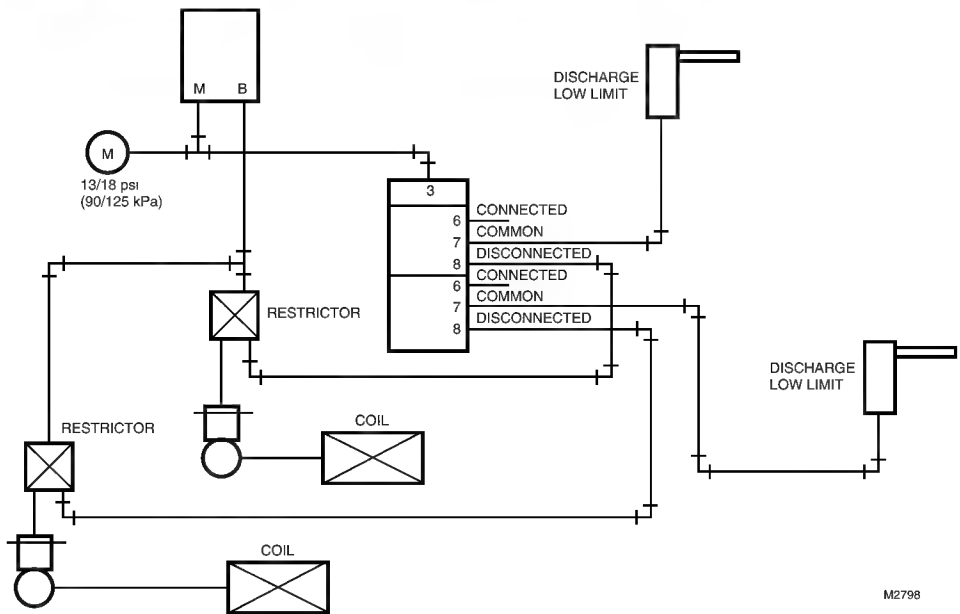
Pneumatic Relays and Switches

RP670 Pneumatic Switching Relay



Pneumatic switching relays block, divert, or bleed pneumatic air lines when pilot pressure is changed from one specific value to another. Commonly applied in Day-Night, Summer-Winter, Start-Stop, On-Off-Auto and other multiple condition systems where control sequence is changed as conditions change. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available with either single-pole, double-throw (spdt) or double-pole, double-throw (dpdt) switching action.
- Second switch on dpdt (RP670B) models molded in natural color for identification.
- Air connections for 5/32 in. (4 mm) O.D. plastic tubing.
- Molded plastic construction with neoprene diaphragms, stainless steel lever.
- In-line mounting, or wall or panel mounting with provided metal spring clip.

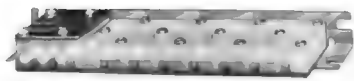


Dimensions, Approximate: 1 1/2 in. diameter, 2 1/4 in. deep
(38 mm diameter, 56 mm deep)
Air Connections: Barb for 5/32 in. (4 mm) O.D. plastic tubing

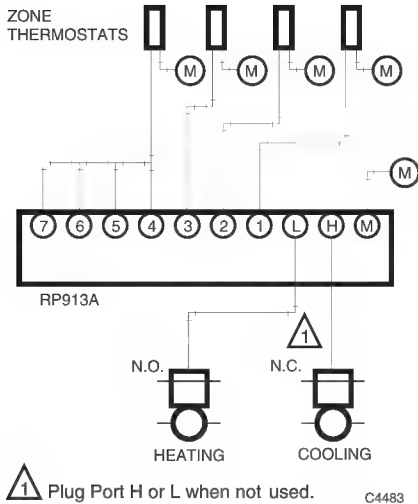
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Maximum Operating Pressure: 30 psi (205 kPa)
Temperature Range: 0 F to 140 F (-18 C to +60 C)

Product Number	Operation	Switching Pressures		Description	Includes
		(psi)	(kPa)		
RP670A1001	SPDT relay	3 and 7 psi	20 and 50 kPa	Pneumatic Switching Relay	14003030-001 -1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP670A1019	SPDT relay	13 and 17 psi	90 and 120 kPa	Pneumatic Switching Relay	14003030-001 -1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP670B1009	DPDT relay	3 and 7 psi	20 and 50 kPa	Pneumatic Switching Relay	14003030-001- 1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP670B1017	DPDT relay	13 and 17 psi	90 and 120 kPa	Pneumatic Switching Relay	14003030-001 -1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP670B1066	DPDT relay	18 and 22 psi	124 and 152 kPa	Pneumatic Switching Relay	14003030-001- 1 1/2 in. Mounting Clip for Mounting relay to wall or panel
RP670B1074	DPDT relay	20 and 25 psi	140 and 175 kPa	Pneumatic Switching Relay	14003030-001- 1 1/2 in. Mounting Clip for Mounting relay to wall or panel

RP913 Pneumatic Load Analyzer



A diaphragm logic pressure selector selects the highest and/or lowest branch pressure input from zone thermostats to operate final control elements in pneumatic control applications.



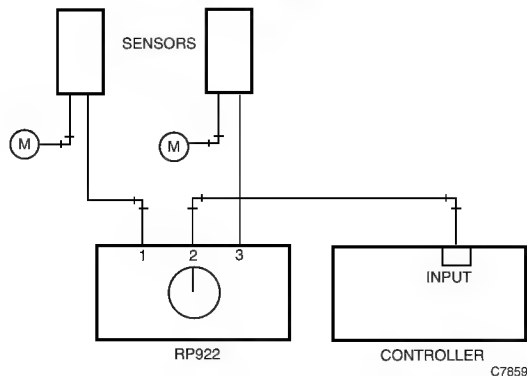
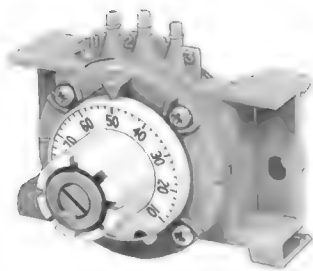
- Replacement devices are available for Johnson, Powers, Robertshaw, and Barber-Colman devices.
- Seven input manifold containing logic diaphragm, air filter, and restrictions.
 - Ten sharp barb connectors for all piping requirements.
 - Large integral filter assures clean air to the manifold.
 - Requires no field adjustment, and plastic construction results in minimum maintenance.
 - Two analyzers can be connected together to increase inputs to twelve.

Dimensions, Approximate: 3/4 in. high, 6 1/2 in. long, 2 1/16 deep (19 mm high, 165 mm long, 52 mm deep)
Airflow Usage: 0.04 scfm (0.019 mL/s)
Air Connections: Barb fittings (10) for 1/4 in. (6 mm) O.D. plastic tubing
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Maximum Operating Pressure: 0 to 18 psi (0 to 125 kPa)
Type: Load Analyzer Relay, 7 input
Operation: Selects highest and/or lowest branch pressure input to operate final control elements
Temperature Range: 0 to 140 F (-18 C to 60 C)
Operating Pressure (Switch and Pilot) Range: Normal 18 psi (Normal 124 kPa)

Replacement Parts:
14001865-001 Filter Cartridge Assembly
14000365-013 O-Ring

Product Number	Mounting Type	Description
RP913A1008	Panel, Wall, In-line	Wall, Panel or In-line Mount Load Analyzer Relay, 7 input

RP922 Pneumatic Potentiometer



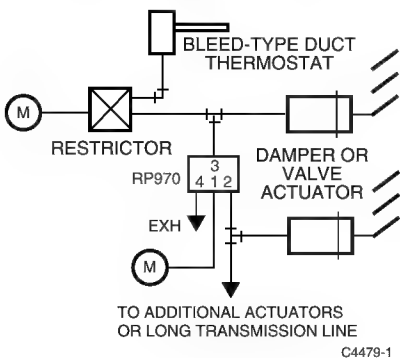
- A three-port pneumatic potentiometer can sum two input pressures, average two input pressures, be an adjustable flow restriction, or be an adjustable pressure supply.
- Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.
- High efficiency integral filters for all ports.
 - High reliability, no internal moving parts.
 - Compact size.
 - High accuracy.

Dimensions, Approximate: 2 7/16 in. wide, 1 5/8 in. deep, 2 7/8 in. high (62 mm wide, 42 mm deep, 73 mm high)
Air Connections: Barb for 5/32 in. (4 mm) O.D. plastic tubing
Operating Pressure Range: 0 to 20 psi (0 to 138 kPa)
Type: Pneumatic Averaging / Ratio Relay
Maximum Operating Pressure: 30 psi (205 kPa)

Product Number	Mounting Type	Description
RP922A1007	Panel, Wall, Snap onto DIN rail	Panel, wall or snap onto DIN rail Mount Pneumatic Averaging / Ratio Relay

Pneumatic Relays and Switches

RP970 Pneumatic Capacity Relay



Direct acting, modulating relay provides increased capacity of the branchline pressure to the final control device.
Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- In-line, wall, or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction with neoprene diaphragms.
- Mounting clip provided.

Dimensions, Approximate: 1 1/2 in. diameter, 1 1/2 in. deep (38 mm dia, 38 mm deep)
Air Connections: Barb fittings, Port 1: 1/4 in. (6 mm) O.D. plastic tubing; Other Ports: 5/32 in. (4 mm) O.D. plastic tubing
Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)
Operating Pressure Range: 0 to 18 psi (0 to 125 kPa)
Type: Pneumatic Capacity Relay
Maximum Operating Pressure: 30 psi (205 kPa)
Operation: Provides increased capacity of branchline pressure to final control device
Temperature Range: 0 F to 140 F (-18 C to +60 C)

Accessories:
14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

Product Number	Mounting Type	Description	Includes
RP970A1008	Panel, Wall, In-line	Wall, Panel or in-Line Mount Pneumatic Capacity Relay	14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel

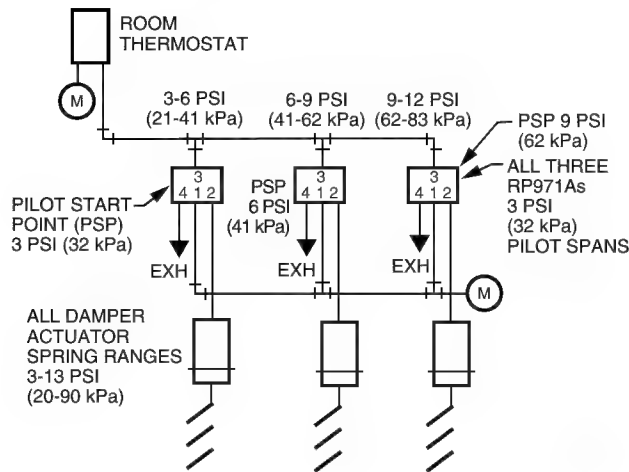
RP971 Pneumatic Ratio Relay



A four port non-bleed pneumatic relay which produces a modulating pressure output, proportional in a fixed ratio to pilot input changes. It is used to control pneumatic valve or damper actuators in sequence from a single thermostat.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Adjustable pilot start point pressures.
- Two pilot pressure spans available.
- Four sharp-barb air connections.
- Molded plastic construction with neoprene.
- Mounting clip provided.



C4478-1

Dimensions, Approximate: 2 in. diameter, 2 5/8 in. deep
(52 mm dia, 67 mm deep)

Airflow Usage: 0.002 scfm (1.0 mL/s) maximum

Air Connections: Barb fittings, Port 1: 1/4 in. (6 mm) O.D. plastic tubing; Other Ports: 5/32 in. (4 mm) O.D. plastic tubing

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Maximum Operating Pressure: 30 psi (206 kPa)

Type: Pneumatic, Four Port Ratio Relay

Output Pressure Range: 3 to 13 psi (21 to 90 kPa)

Operation: Produces modulating pressure output proportional to pilot pressure input

Temperature Range: 0 F to 140 F (-18 C to +60 C)

Accessories:

14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

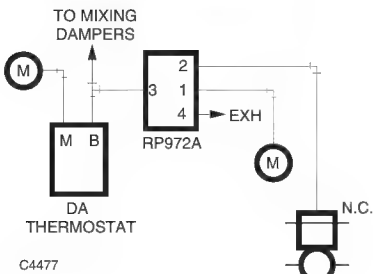
801629T Clip for surface mounting

Product Number	Mounting Type	Input Span*		Description	Includes
		(psi)	(kPa)		
RP971A1007	Panel, Wall or In-line	3 psi	21 kPa	Pneumatic, Four Port Ratio Relay	14003030-002 Mounting Clip
RP971A1015	Panel, Wall or In-line	5 psi	34 kPa	Pneumatic, Four Port Ratio Relay	14003030-002 Mounting Clip
RP971A1023	Panel, Wall or In-line	3 psi	21 kPa	Pneumatic, Four Port Ratio Relay	14003030-002 Mounting Clip, Metric Scaleplate
RP971A1031	Panel, Wall or In-line	5 psi	34 kPa	Pneumatic, Four Port Ratio Relay	14003030-002 Mounting Clip, Metric Scaleplate

* Input Span for 3 to 13 psi (21 to 90 kPa) output.

Pneumatic Relays and Switches

RP972 Pneumatic Reversing Relay



A modulating relay suitable for all types of heating and air conditioning control systems to reverse and increase the capacity of the branchline pressure to the final control element. The output varies inversely with the input with an adjustable offset. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Reverse acting.
- In-line mounting or can be wall or panel mounted with mounting clip provided.
- Molded plastic construction with neoprene diaphragms.

Dimensions, Approximate: 1 1/4 in. diameter, 2 1/4 in. deep (38 mm diameter, 57 mm deep)

Airflow Usage: 0.002 scfm (1.0 mL/s) maximum

Air Connections: Barb fittings for three 5/32 in. (4 mm) and one 1/4 in. (6 mm) O.D. plastic tubing

Capacity: 0.039 scfm at 1 psi differential (18 mL/s at 5 kPa differential)

Operating Pressure: Main: 18 psi, Pilot: 3 to 15 psi (Main: 124 kPa, Pilot: 21 to 103 kPa)

Type: Pneumatic Reversing Relay

Maximum Operating Pressure: 30 psi (205 kPa)

Operation: Output varies inversely with input with an adjustable offset

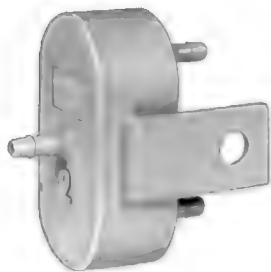
Temperature Range: 0 F to 140 F (-18 C to +60 C)

Accessories:

14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

Product Number	Mounting Type	Description	Includes
RP972A1006	Panel, Wall or In-line	Wall, Panel or In-line Mount Pneumatic Reversing Relay	14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel

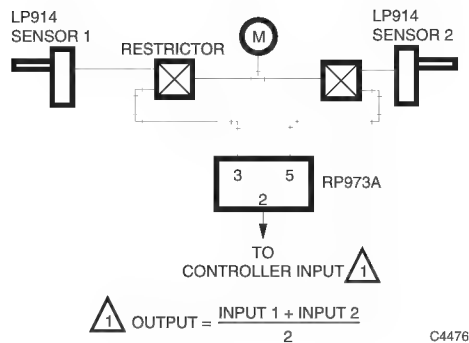
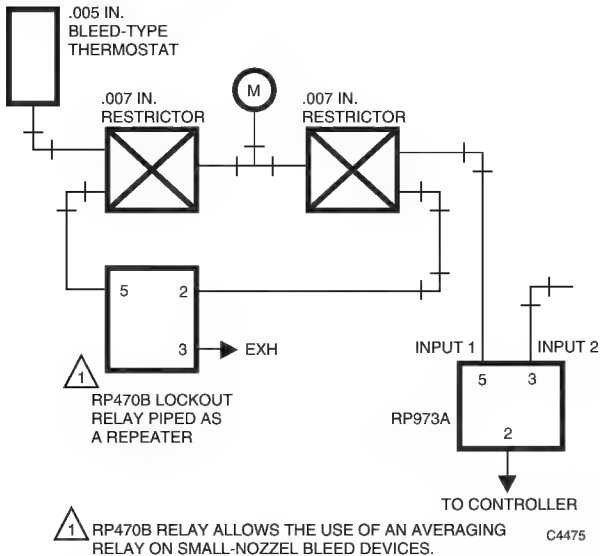
RP973 Pneumatic Averaging Relay



A three-port relay used in HVAC systems averages the signals from two thermostats to control a single device such as a heating coil valve for a multizone unit. The pneumatic averaging relay provides an output pressure equal to the average of two input pressures.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- In-line, wall or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.



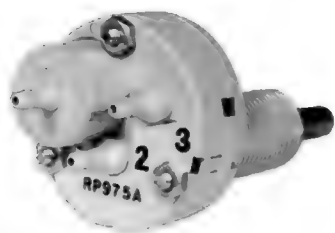
Dimensions, Approximate: 1 1/2 in. high, 7/8 in. wide, 15/16 in. deep (38 mm high, 22 mm wide, 24 mm deep)
Airflow Usage: 0.007 scfm (3.303 mL/s) maximum
Air Connections: Barb fittings for 5/32 in. (4 mm) O.D. plastic tubing

Type: Pneumatic Three-Port Averaging Relay
Maximum Operating Pressure: 30 psi (205 kPa)
Operation: Output pressure equals average of two input pressures
Temperature Range: 32 to 125 F (0 to 52 C)

Product Number	Mounting Type	Description
RP973A1005	Panel, Wall or In-line	Pneumatic Three-Port Averaging Relay. Output is the average of the two inputs.

Pneumatic Relays and Switches

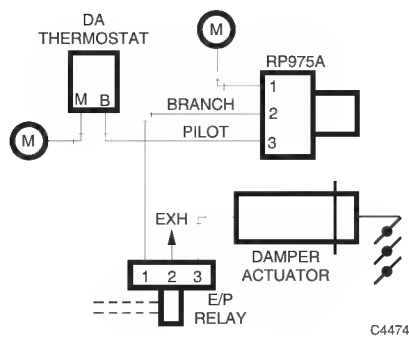
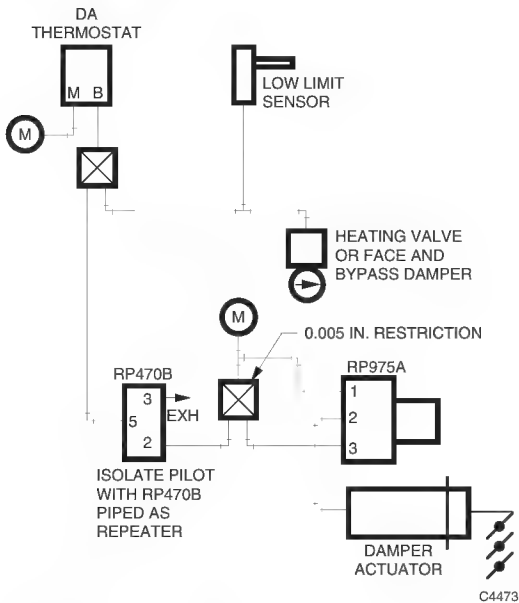
RP975 Pneumatic Hesitation Relay



A three-port hesitation relay provides minimum outside air damper position plus controlled ventilation for large volume unit ventilators.

Replacement devices are available for Johnson, Powers, and Barber-Colman devices.

- Manually adjustable minimum position.
- In-line, wall or panel mounted.
- Sharp-barb air connections.
- Molded plastic construction.



Dimensions, Approximate: 2 1/4 in. high, 2 1/2 in. wide, 3 3/4 in. deep (57 mm high, 63 mm wide, 96 mm deep)

Air Connections: Barb fittings for 5/32 in. (4 mm) O.D. plastic tubing

Capacity: 0.003 scfm (1.65 mL/s)

Type: Pneumatic Three-Port Hesitation relay

Maximum Operating Pressure: 30 psi (205 kPa)

Operation: Provides minimum outside air damper position

Temperature Range: 32 to 125 F (0 to 52 C)

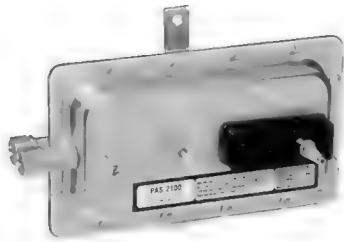
Knob Rotation: Knob has two (2) internal breakaway stops that limit rotation to 188 degree. Each stop, when removed, adds 56 degrees of rotation. Maximum rotation is 300 degrees.

Accessories:

14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

Product Number	Mounting Type	Description	Includes
RP975A1003	Panel, Wall or In-line	Pneumatic Three-Port Hesitation Relay	14003030-001 -1 1/2 in. Mounting Clip for mounting relay to wall or panel. Also includes scaleplate and knob, factory mounted and calibrated. Use with MP909 or MP918 Damper Actuator having a 7 to 13 psi (50 to 90 kPa) spring range

CLEPAS Air Pressure Switch



Senses differential air pressure in HVAC systems and provides and on/off output. A typical application is sensing fan shutdown in a unit ventilator to close the outdoor air damper.

- Reliable pneumatic operation.
- Adjustable setpoint (switching pressure).
- Eliminates electrical interlock wiring.

Dimensions, Approximate: 6-1/8 in. high, 4-1/8 in. wide, 2-13/16 in. deep (156 mm high, 105 mm wide, 72 mm deep)

Air Connections: Sensing Inputs: 1/4 in. compression fittings; Control Air: Barb for 1/4 in. (6 mm) or 3/8 in. (10 mm) O.D. plastic tubing

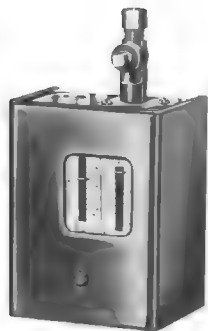
Type: On/Off Pneumatic Airflow Switch

Switching Pressures: 0.15 to 12.0 in w.c., 0.15 to 2.0 in. w.c. (0.037 to 2.99 kPa) (0.037 to 0.50 kPa)

Temperature Range: 0 to 135 F (-18 to 57 C)

Product Number	Mounting Type	Description
CLEPAS2100	Vertical	Pneumatic Airflow Differential Pressure Switch, Low Setpoint Range
CLEPAS2200	Vertical	Pneumatic Airflow Differential Pressure Switch, High Setpoint Range

P643 Pneumatic/Electric Switch

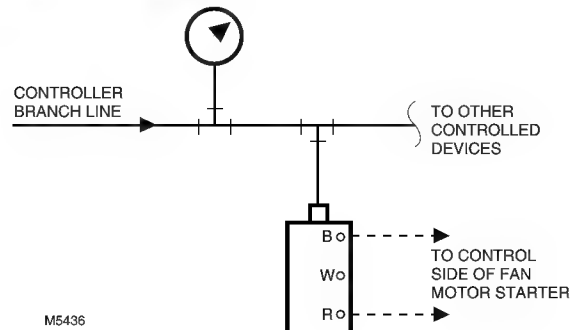


Used to convert a pneumatic signal from a controller to an electrical switching action to provide start and stop control of equipment such as fans and pumps.

Replacement devices available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic/electric switches.

Adjustable setpoint.

- Adjustable differential.
- Externally visible scales.
- Heavy-duty switch.
- Integral gage connection.



Dimensions, Approximate: 7 1/32 in. high, 3 13/16 in. wide, 2 3/4 in. deep (179 mm high, 97 mm wide, 70 mm deep)

Air Connections: Compression fitting 1/4 in. (6 mm) O.D. tubing

Current: 120 Vac: 8.0 AFL, 48.0 LRA, 17.0 A resistive

208/240 Vac: 5.1 AFL, 30.6 ALR, 17.0 A resistive

270 Vac: 17.0 A resistive

480 Vac: 3.5 AFL, 21.0 ALR, 10.0 A resistive

Frequency: 50 Hz, 60 Hz

Type: Pneumatic/Electric Switch

Maximum Operating Pressure: 25 psi (170 kPa)

Switching Pressures: 0 to 22.5 psi (0 to 155 kPa)

Operation: Converts pneumatic signal to electrical switching action

Temperature Range: -30 to +125 F (-34 to +52 C)

Voltage: 208 Vac, 240 Vac, 277 Vac, 480 Vac

Approvals:

Canadian Underwriters Laboratories, Inc: Listed

Underwriters Laboratories, Inc: listed

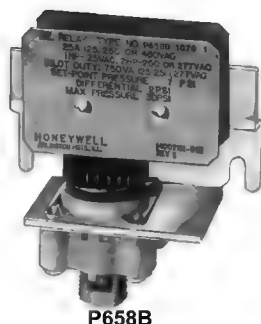
Product Number	Mounting Type	Electrical Connections	Differential Pressure Range		Description	Includes
			(psi)	(kPa)		
P643A1007	Holes in back of case	Knockouts (3) for 1/2 in. conduit	3 to 13 psi adjustable	20 to 90 kPa adjustable	Pneumatic / Electric Switch, Holes in back of case Mount	SPDT switch

Pneumatic Relays and Switches

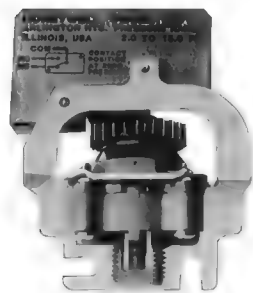
P658 Pneumatic/Electric Switch



P658A



P658B



P658E

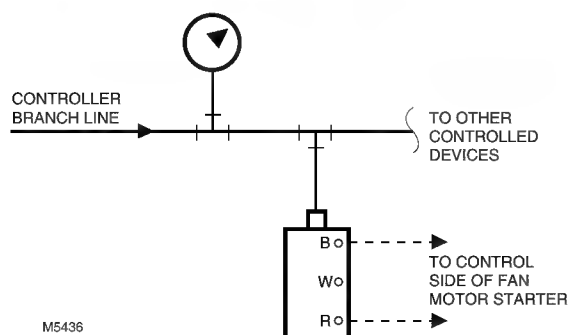


P658F

Pneumatic-electric switches (P658A,B,E and F) used to convert a pneumatic signal from a controller to an electrical switching action (spdt) to provide start and stop control of equipment such as fans and pumps.

Replacement devices available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic/ electric switches.

- Models available for surface or panel mounting.
- Barb protected by open cage.
- All ferrous parts plated to prevent corrosion.
- Factory calibrated setpoint field adjustable to meet job requirements.
- Neoprene diaphragm element.



M5436

Dimensions, Approximate

P658A: 5 3/8 in. high, 3 3/8 in. wide, 2 in. deep (137 mm high, 86 mm wide, 51 mm deep)

P658B: 3 7/16 in. high, 3 1/4 in. wide, 1 7/8 in. deep (87 mm high, 83 mm wide, 48 mm deep)

P658E: 3 5/16 in. high, 2 7/8 in. wide, 1 3/4 in. deep (84 mm high, 73 mm wide, 44 mm deep)

P658A: 3 3/16 in. high, 2 7/8 in. wide, 1 1/2 in. deep (81 mm high, 73 mm wide, 38 mm deep)

Air Connections: Barb fitting for 1/4 in. (6 mm) O.D. plastic tubing

Type: Pneumatic/Electric Switch

Maximum Operating Pressure: 30 psi (207 kPa)

Switching Pressures: 10 psi (69 kPa)

Temperature Range: 40 F to 140 F (4 F to 66 C)

Voltage: 125 Vac, 250 Vac, 480 Vac

Approvals:

Canadian Underwriters Laboratories, Inc: Listed, Volume II

Underwriters Laboratories, Inc: Category SDYF

Product Number	Setpoint Field Adjustable		Motor Load	Resistive Load	Pilot Duty	Mounting Type	Description	Electrical Connections	Differential Pressure Range	
	(psi)	(kPa)							(psi)	(kPa)
P658A1013	2 to 24 psi	14 to 165 kPa	1 hp @ 125 Vac, 2 hp @ 250 or 277 Vac	25A @ 125, 250 or 480 Vac	750 VA @ 125, 250 or 277 Vac	Surface (includes case)	Factory Calibrated at 10 psi.	Screw terminals	2 psi	14 kPa
P658B1012	2 to 24 psi	14 to 165 kPa	1 hp @ 125 Vac, 2 hp @ 250 or 277 Vac	25A @ 125, 250 or 480 Vac	750 VA @ 125, 250 or 277 Vac	Panel	Factory Calibrated at 10 psi.	Screw terminals	2 psi	14 kPa
P658E1001	2 to 17 psi	14 to 117 kPa	3/4 hp @ 125, 250 or 277 Vac	25A @ 125, 250 or 277 Vac 10A @480 Vac	720 VA @ 125, 250 or 277 Vac	Panel	No Factory Calibration.	1/4 in. quick-connect male terminals	1 psi	7 kPa
P658E1050	2 to 17 psi	14 to 117 kPa	3/4 hp @ 125, 250 or 277 Vac	25A @ 125, 250 or 277 Vac 10A @480 Vac	720 VA @ 125, 250 or 277 Vac	Panel	Factory Calibrated at 12 psi.	1/4 in. quick-connect male terminals	1 psi	7 kPa

Pneumatic Relays and Switches

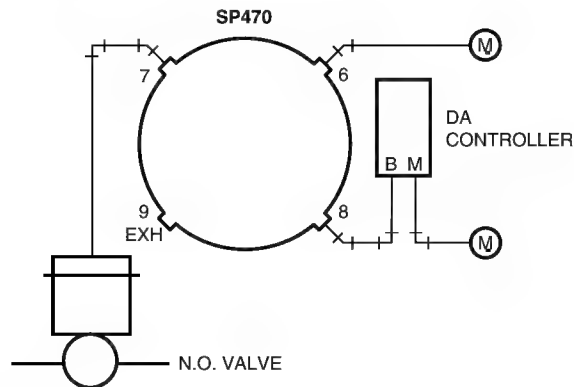
Product Number	Setpoint Field Adjustable		Motor Load	Resistive Load	Pilot Duty	Mounting Type	Description	Electrical Connections	Differential Pressure Range	
	(psi)	(kPa)							(psi)	(kPa)
P658E1167	2 to 25 psi	14 to 172 kPa	3/4 hp @ 125, 250 or 277 Vac	25A @ 125, 250 or 277 Vac 10A @480 Vac	720 VA @ 125, 250 or 277 Vac	Panel	No Factory Calibration.	1/4 in. quick-connect male terminals	1 psi	7 kPa
P658F1000	2 to 17 psi	14 to 117 kPa	3/4 hp @ 125, 250 or 277 Vac	25A @ 125, 250 or 277 Vac 10A @480 Vac	720 VA @ 125, 250 or 277 Vac	Panel, through double D hole secured with hex nut	No Factory Calibration.	1/4 in. quick-connect male terminals	1 psi	7 kPa

SP470 Pneumatic Diverting Switches



Pneumatic diverting switch used to manually divert, block, or bleed air in pneumatic air lines to revise control sequence with a change in conditions. Commonly applied on Day-Night, Summer-Winter, On-Off-Auto, or Start-Stop functions. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell switches.

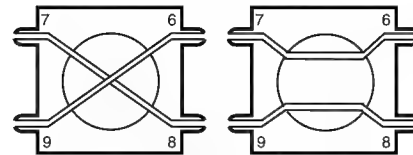
- Available in two-position or three-position devices.
- Mountable on a panel up to 7/16 in (11 mm) thick.
- Complete with knob and scaleplate.



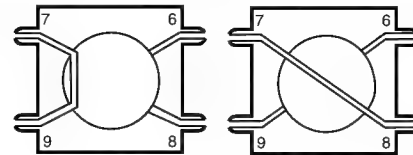
NOTES:

- POSITION 1, VALVES OPEN: PORTS 7 AND 9 CONNECTED, PORTS 6 AND 8 BLOCKED
- POSITION 2, VALVE AUTO: PORTS 7 AND 8 CONNECTED, PORTS 6 AND 9 BLOCKED
- POSITION 3, VALVE CLOSED: PORTS 7 AND 6 CONNECTED, PORTS 8 AND 9 BLOCKED

C4290



TWO-POSITION SWITCH



THREE-POSITION SWITCH

C1887

Dimensions, Approximate: 1 5/8 in. high, 1 9/16 in. wide, 3 in. deep (41 mm high, 40 mm wide, 76 mm deep)

Flow capacity: 0.175 scfm (82.6 mL/s) minimum at 1 psi pressure drop

Air Connections: Barb fittings 1/4 in. (6 mm) and 5/32 in. (4 mm) O.D. plastic tubing

Operating Pressure Range: 0 to 18 psi (0 to 125 kPa)

Type: Two or Three Position Pneumatic Diverting Switch

Maximum Operating Pressure: 30 psi (207 kPa)

Operation: Used to manually divert, block or bleed pneumatic air lines

Temperature Range: 0 to 140 F (-18 to +60 C)

Humidity Ratings: 5 to 95% RH

Accessories:

14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

Replacement Parts:

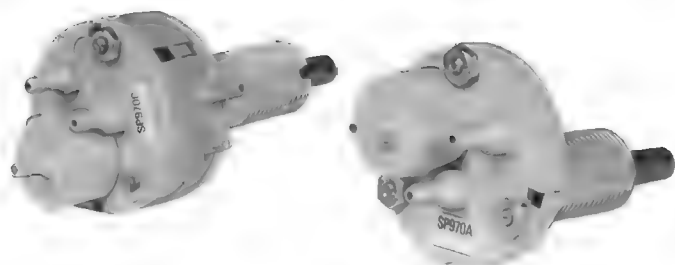
14003078-003 Pneumatic 2-position switch

14003078-004 Pneumatic 3-position switch

Product Number	Mounting Type	Description	Includes
SP470A1000	Panel	Two Position Pneumatic Diverting Switch	Mounting nuts, knobs and scaleplate
SP470A1018	Panel	Three Position Pneumatic Diverting Switch	Mounting nuts, knobs and scaleplate

Pneumatic Relays and Switches

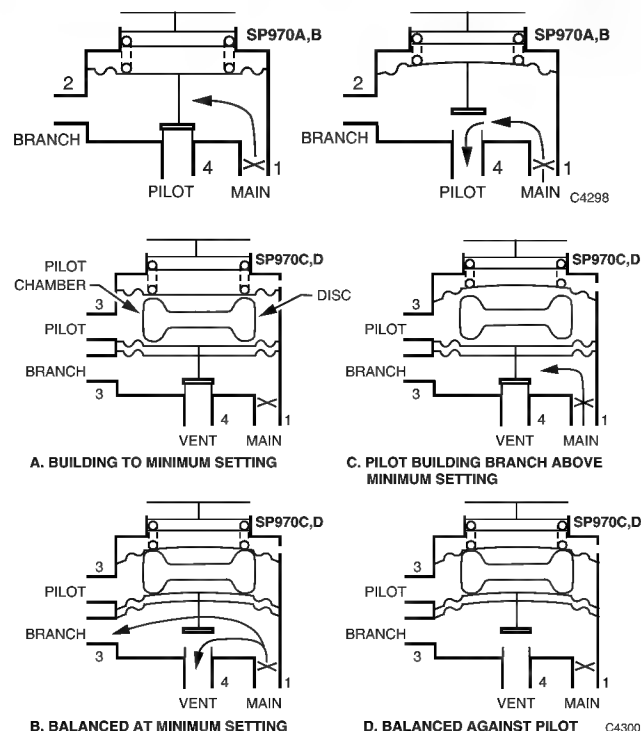
SP970 Pneumatic Manual or Minimum Position Switches



Used to manually position a remote damper actuator or to reset the setpoint of a pneumatic controller. They can also provide minimum damper position by setting a minimum pressure limit in the branch line to the damper actuator.

Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell switches.

- Two spans available.
- Pilot bleed and isolated pilot models available.
- Wall or panel mounting.



Dimensions, Approximate: 1 1/2 in. diameter, 3 in. deep
(38 mm diameter, 76 mm deep)

Airflow Usage: 0.022 scfm (9.8 mL/s)

Air Connections: Barb fittings 5/32 in. (4 mm) O.D. plastic tubing

Capacity: 0.021 scfm (9.4 mL/s) below minimum position.

Type: Three-port pneumatic manual or minimum position switch with pilot bleed

Maximum Safe Operating Pressure: 30 psi (207 kPa)

Operation: Used to manually position a remote damper actuator or reset setpoint of pneumatic controller

Temperature Range: 0 to 140 F (-18 to +60 C)

Knob Rotation: Knob normally rotates 188 degrees. Two internal breakaway stops in the knob allow 244 degrees and 300 degrees of rotation. Maximum rotation is 300 degrees.

Accessories:

14003203-003 Conversion Kit to convert Johnson, Powers, Robertshaw, Barber Coleman, and older Honeywell switches.

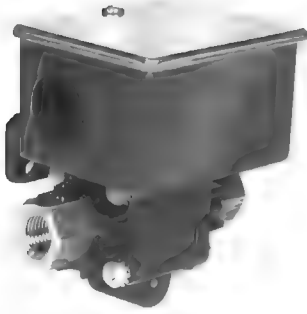
Replacement Parts:

14003030-001 1 1/2 in. Mounting Clip for Mounting relay to wall or panel

14003022-003 Final assembly PRV, 5 psi (34 kPa)

Product Number	Mounting Type	Output Pressure Range		Input Span		Description	Includes
		(psi)	(kPa)	(psi)	(kPa)		
SP970A1005	Panel or Wall	3 to 13 psi	21 to 90 kPa	10 psi	69 kPa	Manual Pressure Regulator or provides minimum branch line pressure when used with a high capacity device (like a RP920).	Knob, 0 to 100% scale plate and locknuts
SP970A1013	Panel or Wall	5.5 to 10.5 psi	38 to 73 kPa	5 psi	34 kPa	Manual Pressure Regulator or provides minimum branch line pressure when used with a high capacity device (like a RP920).	Knob, 0 to 100% scale plate and locknuts
SP970C1001	Panel or Wall	3 to 13 psi	21 to 90 kPa	10 psi	69 kPa	Manual Pressure Regulator or provides minimum branch line pressure when used with a low capacity device.	Knob, 0 to 100% scale plate and locknuts
SP970C1043	Panel or Wall	5.5 to 10.5 psi	38 to 73 kPa	5 psi	34 kPa	Manual Pressure Regulator or provides minimum branch line pressure when used with a low capacity device.	Knob, 0 to 100% scale plate and locknuts

UEC24014 Differential Pressure Switch



Differential pressure switches open or close a switch contact in response to a change in sensed differential pressure.

- NEMA Enclosures.
- UL and CSA Listed.
- Gold Clad Contacts.
- Brass Pipe Connection.
- Pipe or Surface Mount.

Dimensions, Approximate: 3 1/2 in. high, 2 3/8 in. wide
(89 mm high, 58 mm wide)

Connections: Pipe connection: Brass, 1/4 in. NPT
Electric connection: terminal strip, 16 AWG max.

Temperature Ratings: 30 to 160 F (-1 to +71 C)

Type of Control: Pneumatic

Approvals:

Canadian Standards Association: Approved

Factory Mutual: Approved

NEMA Standard: NEMA 1

Product Number	Differential Pressure Range		Pressure Ranges	Mounting Type
	(psi)	(kPa)		
UEC24014M262	4 to 45 psi	28 to 300 kPa on decreasing pressure, 38 to 310 kPa on increasing pressure	150 psi at either port	Pipe or surface
UEC24014M262M900	4 to 45 psi	28 to 300 kPa on decreasing pressure, 38 to 310 kPa on increasing pressure	150 psi at either port	Pipe or surface

Replacement Parts

OS Number	Description	Used With
14003199-002	Bag assembly with two scale plates, knob assembly and nuts for SP470A	SP470A
14003078-003	Pneumatic Switch with base (14003079-002), housing (14003080-001), seal-oto [2-pos] (14004851-001), Spring (14003085-004), Rotor [1-2] (14003081-001), washer (14003332-001), shaft (14003084-001), Ret-ring (14003089-001), Nut-round (802829-20), Nut (14001	SP407A
14003022-003	Final assembly PRV, with housing (14003023-001), 3 Nut (304886), 3 screw (14001850-105), diaphragm (14003164-002), disc-spring (14003024-001), Retainer (14003026-001), spring [10# range] (14003025-001), Shaft (14003045-001), Pin (14003236-001), 11 Housing	SP970A
801629T	Clip for RP971	RP971

Pneumatic Relay Switch Accessories

OS Number	Description	Used With
14003030-001	1 1/2 in. Mounting Clip for Mounting relay to wall or panel	SP970; RP470; RP471
14003638-001	Bag Assembly, Mounting Hardware, RP418	RP471, RP418
315178/0062	Cup, feedback spring for old gradutrol relay	

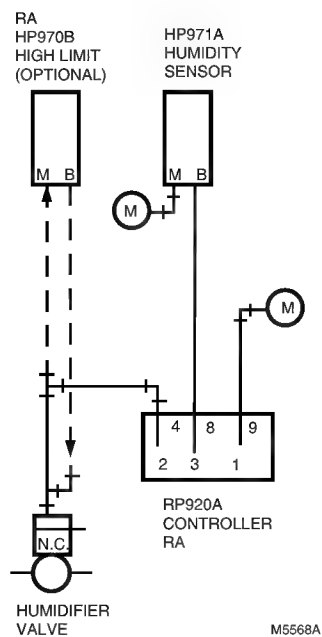
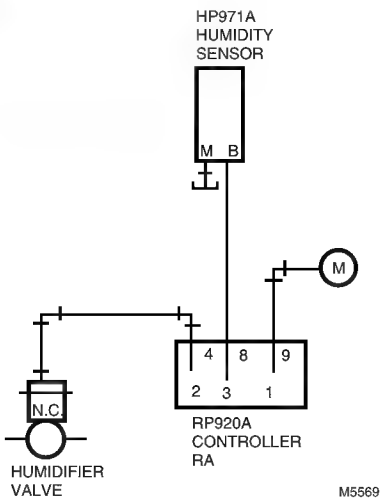
Pneumatic Sensors—Humidity

HP971 Pneumatic Humidity Sensor



One- or two-pipe, direct-acting humidity sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators in systems requiring humidification or dehumidification control.

- Corrosion resistant materials.
- Simple plug-in air head connections.
- Factory calibrated.
- Continuous relative humidity indication available by using receiver gage.
- Integral or external restriction can be used.

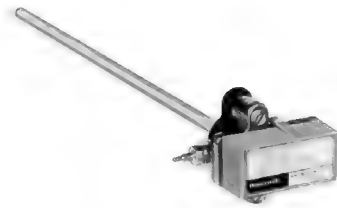


Application Type: Humidity
Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep
(88 mm high, 51 mm wide, 41 mm deep)
Action: Direct Acting
Airflow Usage: 0.022 scfm (10.4 mL/s)

Connections: 5/32 in. tubing
Maximum Operating Temperature: 125 F (52 C)
Maximum Operating Pressure: 25 psi (172 kPa)
Output Pressure Range: 3 psi to 15 psi (21 kPa to 103 kPa)
Supply Pressure: 16-21 psi (110-145 kPa)

Product Number	Mounting Type	Number of Pipes	Sensor Range	Comments
HP971A1008	Vertical or Horizontal Wall Mounting or Mounted in Duct Sampling Chamber	1 or 2	15 to 75%RH	Order Cover Separately
HP971A1024	Vertical or Horizontal Wall Mounting or Mounted in Duct Sampling Chamber	1 or 2	15 to 85% RH	Order Cover Separately

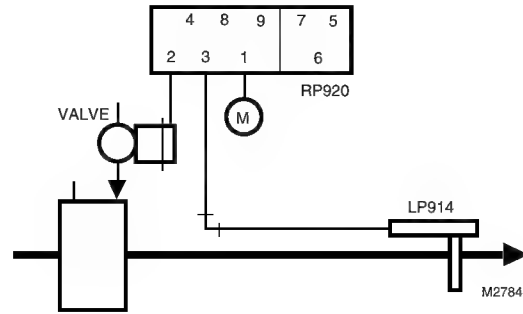
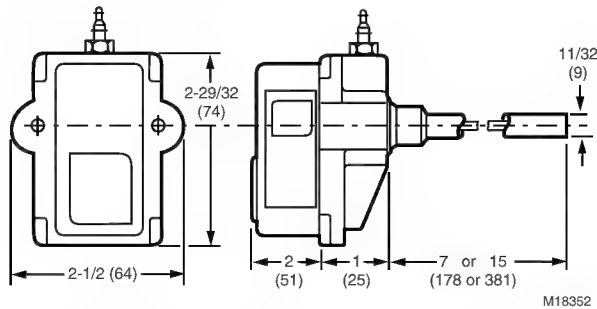
LP914 Pneumatic Temperature Sensor



One-pipe, direct-acting temperature sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators. Rod and tube insertion element for duct, well, or through-the-wall mounting.

- Corrosion resistant.
- Continuous temperature indication available by using receiver gage.

Dimension Diagram



Application Type: Temperature

Dimensions, Approximate: 2 29/32 in. high, 2 1/2 in. wide. Length range: 6 1/2 to 27 in. (74 mm high, 64 mm wide. Length range: 164 to 432 mm long)

Action: Direct Acting

Airflow Usage: 0.019 scfm (540 sccm)

Connections: Push-on barb for 5/32 in. (4 mm) and 1/4 in. (6 mm) O.D. tubing

Maximum Operating Temperature: 265 F (129 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Output Pressure Range: 3 psi to 15 psi (21 kPa to 103 kPa)

Accessories:

315046A Well, 1/2 NPT Copper, 15 1/2 in. (392 mm) long

315046B Well, 1/2 NPT Copper, 7 1/2 in. (191 mm) long

315904A Well, 1/2 NPT Stainless Steel, 15 7/16 in. (394 mm) long

315904B Well, 1/2 NPT Stainless Steel, 7 5/16 in (186 mm) long

311085/0107 Sunshield for LP9141011

Replacement Parts:

315602 Foam Filter, Inner

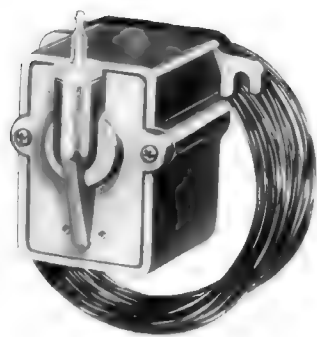
14004664-001 Felt Filter, Inner

309379 SCREEN LP914

Product Number	Element Length		Mounting Type	Number of Pipes	Sensor Element	Sensor Range	
	(inch)	(mm)				(F)	(C)
LP914A1003	15 in.	381 mm	Duct	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1011	27 in.	686 mm	Wall	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1029	15 in.	381 mm	Well	1	Rod and tube	40 to 240 F	5 to 115 C
LP914A1045	7 in.	178 mm	Duct	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1052	7 in.	178 mm	Well	1	Rod and tube	40 to 240 F	5 to 115 C
LP914A1060	7 in.	178 mm	Well	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1144	15 in.	381 mm	Duct	1	Rod and tube	25 to 125 F	-4 to +52 C
LP914A1151	15 in.	381 mm	Duct	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1177	15 in.	381 mm	Well	1	Rod and tube	40 F to 240 F	5 C to 115 C
LP914A1193	6 1/2 in.	165 mm	Duct	1	Rod and tube	-40 to +160 F	-40 to +71 C
LP914A1201	6 1/2 in.	165 mm	Well	1	Rod and tube	40 F to 240 F	5 C to 115 C
LP914A1235	15 in.	381 mm	Duct	1	Rod and tube	25 F to 125 F	-4 C to 52 C
LP914A1268	15 in.	381 mm	Duct or well	1	Rod and tube	40 to 240 F	5 to 115 C

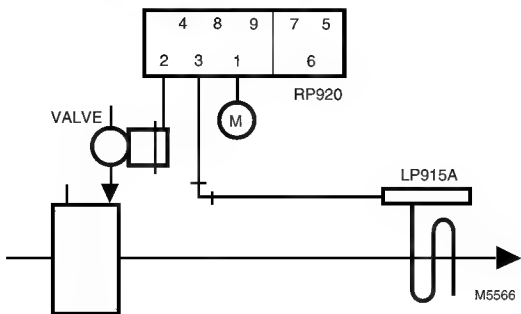
Pneumatic Sensors—Temperature

LP915 Pneumatic Temperature Sensor



One-pipe, direct-acting temperature sensor used with RP908/ RP920 Controllers to provide proportional control of pneumatic valve or damper actuators. Averaging, liquid-filled element for duct mounting.

- Easily formed into variety of configurations to assure sensing of average temperatures.
- Continuous temperature indication available by using receiver gage.



Application Type: Temperature

Dimensions, Approximate: 3 in. high, 1 7/8 in. wide, 1 1/2 in. deep (76 mm high, 44 mm wide, 33 mm deep)

Action: Direct Acting

Airflow Usage: 0.019 scfm (540 sccm)

Connections: Push-on barb for 5/32 in. (4 mm) and 1/4 in. (6 mm) O.D. tubing

Maximum Operating Temperature: 225 F (118 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Output Pressure Range: 3 psi to 15 psi (21 kPa to 103 kPa)

Supply Pressure: 18 psi (124 kPa)

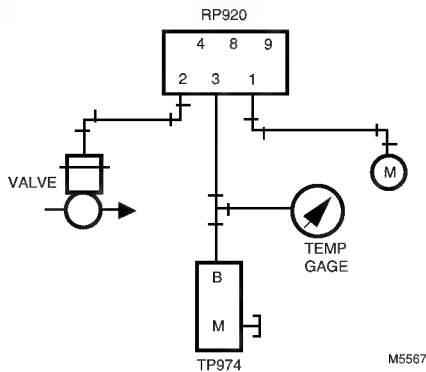
Product Number	Element Length		Mounting Type	Number of Pipes	Sensor Element	Sensor Range	
	(inch)	(mm)				(F)	(C)
LP915A1044	18 1/2 ft	5.6m	Duct	1	Liquid-filled	0 to 200 F	-18 to +93 C
LP915A1051	8 7/8 ft	2.7m	Duct	1	Liquid-filled	0 to 200 F	-18 to +93 C
LP915A1077	18 1/2 ft	5.6m	Duct	1	Liquid-filled	25 to 125 F	-4 to +52 C

TP974 Pneumatic Temperature Sensor



One- or two-pipe direct-acting temperature sensor used with RP908/RP920 Controllers to provide proportional control of pneumatic valve and damper actuators.

- Plug-in air connections.
- High efficiency air filter.
- Bimetal element.
- Continuous temperature indication available by using receiver gage.



Application Type: Temperature Sensor

Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep (83 mm high, 51 mm wide, 41 mm deep)

Action: Direct Acting

Airflow Usage: 0.019 scfm (9 mL/s)

Maximum Operating Temperature: 110 F (43 C)

Maximum Operating Pressure: 25 psi (170 kPa)

Output Pressure Range: 3 psi to 15 psi (21 kPa to 103 kPa)

Supply Pressure Range: 16 to 25 psi (110 to 172 kPa) (124 kPa)

Replacement Parts:

14001865-001 Filter Cartridge Assembly

Product Number	Mounting Type	Number of Pipes	Sensor Element	Sensor Range		Comments
				(F)	(C)	
TP974A2000	Vertical or Horizontal Wall Mounting	1 or 2	Bimetal	50 F to 100 F	10 C to 38 C	Order Cover Separately

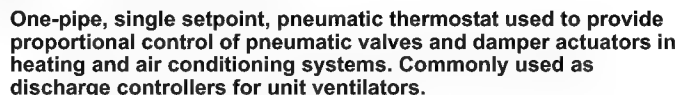
Pneumatic Sensor Accessories

OS Number	Description	Used With
107736A	Bobbin assembly for L7022	LP7022
311085/0107	Sunshield for LP914	LP914
314820	Restrictor Plate	
314826	Diaphragm	
315597	Gasket for LP915	LP915
315602	Filter, Inner	LP914; LP915
315046A	Well, 1/2 NPT Copper, 15 1/2 in. (392 mm) long	LP914
315046B	Well, 1/2 NPT Copper, 7 1/2 in. (191 mm) long	LP914
315904A	Well, 1/2 NPT Stainless Steel, 15 7/16 in., 394 mm	LP914
315904B	Well, 7 5/16 in., 186 mm, stainless steel, 1/2 in. NPT	LP914
316016A	General purpose mounting assembly, includes 3 3/4 in. mounting bracket, scale plate, knob, bulb hangers, screws, and nuts	LP914
316016C	Knob and scale plate assembly with screws	
316016M	Knob, large scale plate and hanger assembly with screws	

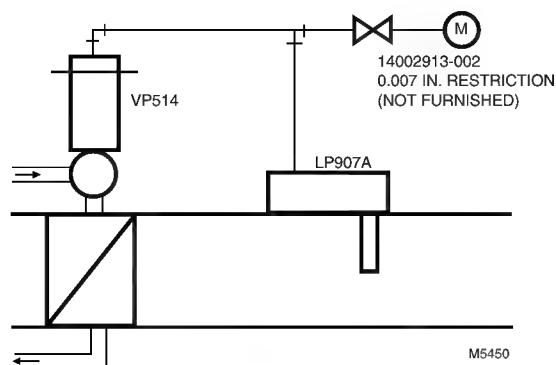
Replacement Parts

OS Number	Description	Used With
14004530-001	Seamless Brass Tube with 11/32 inch outside diameter and 1/4 inch inside diameter	LP914A
14004664-001	0.36 inch diameter Wool felt filter no greater than 0.18 inch thick	LP914A; LP915A
320110	Nut-Lock	LP915A; LP916A; LP916B

LP907 Airstream Insertion Pneumatic Thermostat



- Rod and tube insertion sensing element.
- Wide throttling range.
- Gage tee and tank valve facilitate checking line pressures.



Dimensions, Approximate: 5 7/16 in. high, 1 1/16 in. wide, 2 1/4 in. deep (138 mm high, 27 mm wide, 57 mm deep)

Air Connections: Barb fittings 1/4 in. (6 mm) poly tubing

Operating Temperature Range: 40 F to 140 F(4 C to 60

Setpoint: Single

Maximum Storage Temperature: 150 F maximum (66 C maximum)

Type: Airstream Insertion Thermostat, Direct Acting, Bleed-type controller with rigid element

Accessories:

14002913-002 .007 in. Red Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 1/4 in.; Order in Quantities of 10.

14002913-003 .007 in. Red Filter Restriction Assembly; Inlet: 1/4 in.,
Outlets: 1/4 in. and 5/32 in.

CCT2085 Pneumatic Fitting - Gauge Adapter fits any standard 1/8 in. NPT gage. Must Purchase in Multiples of 10

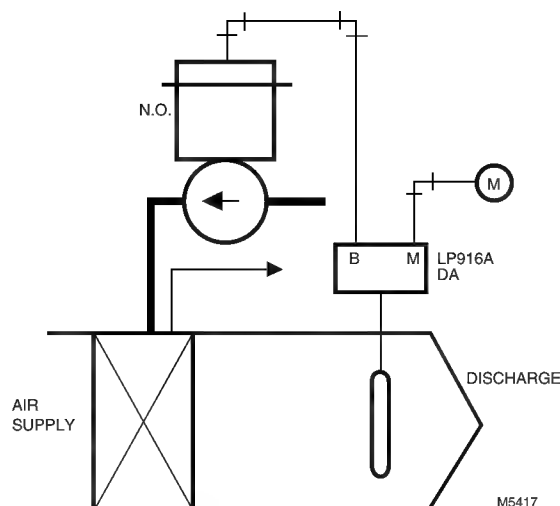
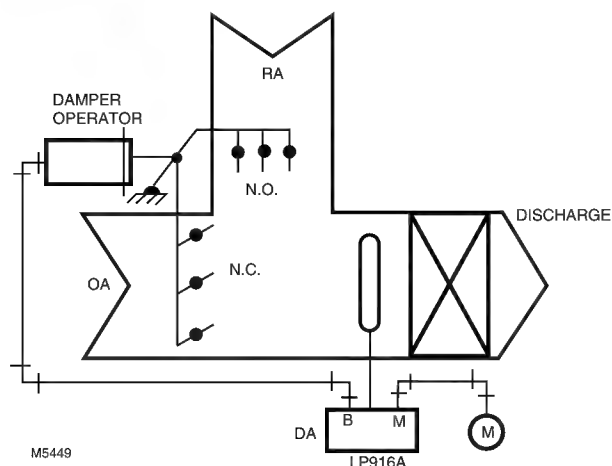
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LP916 Pneumatic Thermostat



Two-pipe, single temperature, unit mounted, remote bulb pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems.

- Liquid filled remote bulb.
- Direct Acting (DA), Reverse Acting (RA) and Heating/Cooling (DA/RA) models are available.



Application Type: Unit ventilator

Dimensions, Approximate: 4 3/4 in. high, 3 3/4 in. wide, 3 in. deep (121 mm high, 95 mm wide, 76 mm deep)

Airflow Usage: 0.022 scfm (10.4 mL/s) with 0.007 in. restriction

Air Connections: Barb fittings 1/4 in. (6 mm)

Maximum Air Pressure: 25 psi (170 kPa)

Maximum Operating Temperature: 135 F (57 C)

Maximum Storage Temperature: 150 F (66 C)

Setpoint: Single

Type: Remote Bulb Pneumatic Thermostat

Accessories:

14004376-001 Gasket for 14004378 Connector Assembly

14004378-002 Connector Assembly, with integral 0.005 in. restriction and filters for post 1984 units

316016A General purpose mounting assembly, includes 3 3/4 in. mounting bracket, scale plate, knob, bulb hangers, screws, and nuts

316016C Knob and scale plate assembly with screws

316016M Knob, large scale plate and hanger assembly with screws

CCT729A Gage Adapter for Calibration. Add 305965 0 to 30 psi Gage for Complete Tool.

316297 Bulb hanger (2 required)

107324A Capillary Holder Assembly for duct insertion, 8 3/8 in. long

Replacement Parts:

14003113-002 Repair kit containing 0.007 in. restrictor plate, filters, and gaskets for pre-1984 units

Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint Range	Comments	Includes
LP916A1019	Direct Acting	—	2	Warmer/Cooler	Order hangers separately	Integral Mounting Bracket and 3045284 Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately.
LP916A1134	Direct Acting	—	2	Warmer/Cooler	—	Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 3045284 Bag Assembly (mounting hardware).
LP916A1175	Direct Acting	—	2	40 F to 80 F	—	Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 3045284 Bag Assembly (mounting hardware).
LP916B1017	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Warmer/Cooler	Order hangers separately	Integral Mounting Bracket and 3045284 Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately.

Pneumatic Thermostats

Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint Range	Comments	Includes
LP916B1058	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 9 psi	2	Warmer/Cooler	Order hangers separately	Integral Mounting Bracket and 3045284 Bag Assembly (mounting hardware). Order bulb hangers (316297-00021) separately.
LP916B1074	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Warmer/Cooler	Order mounting bracket, knob, hangers and scaleplate separately	Order Mounting Bracket, Knob, Bulb Hangers, and Scale plate separately.
LP916B1082	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Warmer/Cooler	New installation model	Integral Mounting Bracket, (2) 316297-00021 Bulb Hangers and 3045284 Bag Assembly (mounting hardware).
LP916B1090	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Warmer/Cooler	—	Integral Mounting Bracket, (2) 316297 00021 Bulb Hangers and 3045284 Bag Assembly (mounting hardware).
LP916C1023	Reverse Acting	—	2	60 F to 80 F	—	Integral Mounting Bracket, (2) 316297 00021 Bulb Hangers and 3045284 Bag Assembly (mounting hardware).

TP938 Pneumatic Thermostat

Application Type: Dual Setpoint Heat/Cool Thermostat

Air Connections: Barb fittings 1/4 in. (6 mm)

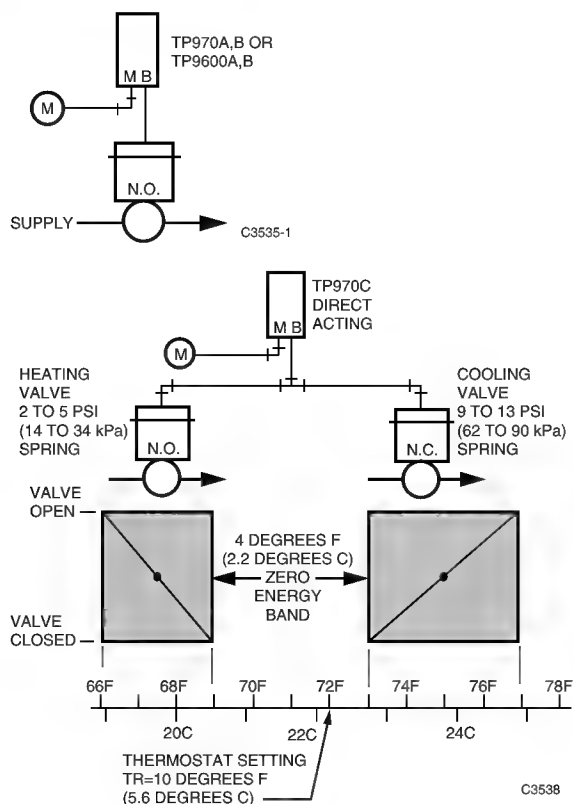
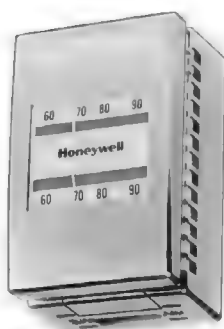
Maximum Storage Temperature: (66 C maximum)

Output Pressure Range: 3 to 15 psi (21 to 103 kPa)

Remote Bulb: No

Product Number	Action	Setpoint Temperature Range	Maximum Operating Pressure	
			(psi)	(kPa)
TP938A1005	Direct Acting	15 C to 30 C	3 to 15 psi	21 to 103 kPa

TP970 Pneumatic Thermostat



Two-pipe, single setpoint, pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

- Honeywell's best pneumatic thermostat-TP970 series.
- Shock-resistant, suspension-mounted thermostats provide dependable performance and responsiveness year in and year out.
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Wide throttling range models for Zero Energy Band (ZEB) operation are available.
- Adapter plate in Convertastat™ and Modernization kits covers existing thermostat wallmark.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options.
- Typical Wide Throttling Range Application

Application Type: Heating

Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep (83 mm high, 51 mm wide, 41 mm deep)

Airflow Usage: 0.011 scfm (5.2 mL/s)

Maximum Operating Temperature: 100 F (38 C)

Maximum Storage Temperature: 150 F (66 C)

Maximum Safe Pressure: 25 psi (172 kPa)

Remote Bulb: No

Sensor Element: Bimetal

Throttling Range: (2 F to 10 F (factory set 4 F))

1 C to 5 C (factory set 2 C)

Type: Thermostat

Accessories:

14002374-004 Restrictor Block Assembly, 0.005, For 2-Pipe TP970 Series Thermostats.

14002430-001 Thermostat Guard

14004447-001 Setpoint Cam Assembly for direct acting stat TP970A

14004447-002 Setpoint Cam Assembly

AK3863 Honeywell Thermostat Tool Kit, TP970/TP900

Replacement Parts:

14001865-001 Filter Cartridge Assembly

14004459-001 Scaleplate Bag Assembly, 60 to 90 F

Product Number	Action	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP970A2004	Direct Acting	2	Single	60 F to 90 F	—	Order Cover Separately
TP970A2012	Direct Acting	2	Single	40 F to 70 F	—	Order Cover Separately
TP970A2020	Direct Acting	2	Single	15C to 30C	—	Order Cover Separately
TP970A2038	Direct Acting	2	Single	60 F to 90 F	Modernization kit used to convert older Honeywell Thermostats.	Thermostat, large wall plate and satin chrome cover.
TP970A2053	Direct Acting	2	Single	60 F to 90 F	Modernization kit used to convert older Honeywell Thermostats and competitive thermostats.	Thermostat, large wall plate and satin chrome cover.
TP970A2145	Direct Acting	2	Single	60 F to 90 F	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover.

Pneumatic Thermostats

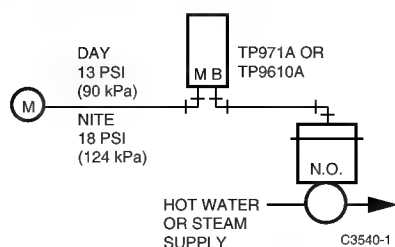
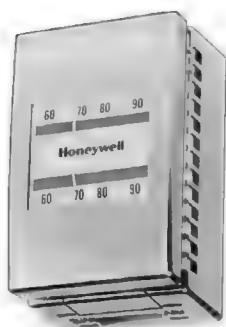
Product Number	Action	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP970A2234	Direct Acting	2	Single	15C to 30C	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover.
TP970A2242	Direct Acting	2	Single	60 F to 90 F	Convertastat™ Kit	Thermostat, small wall plate and beige cover.
TP970A2259	Direct Acting	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and satin chrome cover.
TP970A2283	Direct Acting	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and beige cover.
TP970B2002	Reverse Acting	2	Single	60 F to 90 F	—	Order Cover Separately
TP970B2010	Reverse Acting	2	Single	15C to 30C	—	Order Cover Separately
TP970B2077	Reverse Acting	2	Single	60 F to 90 F	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover.
TP970B2150	Reverse Acting	2	Single	15C to 30C	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover.
TP970B2166	Reverse Acting	2	Single	60 F to 90 F	Convertastat™ Kit	Thermostat, small wall plate and beige cover.
TP970B2182	Reverse Acting	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and satin chrome cover.
TP970B2216	Reverse Acting	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and beige cover.
TP970C2000	Direct Acting	2	Single	60 F to 90 F	Wide Throttling Range 5-25 F (3-14 C)	Order Cover Separately

** A **Tradeline Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) for new installations or to convert newer, small size Honeywell or competitor thermostat, not requiring a wall plate adapter.

A **Convertastat™ Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) and a small Universal Wall Plate Adapter to convert newer, small size Honeywell or competitor thermostats.

A **Modernization Kit** includes a TP970 Series thermostat with Satin Chrome Universal Cover, Windows (horizontal (F), vertical (F) and blank) and a large Universal Wall Plate Adapter to convert older thermostats.

TP971 Pneumatic Day/Night Thermostat



Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep
(83 mm high, 51 mm wide, 41 mm deep)

Airflow Usage: 0.011 scfm (5.2 mL/s)

Maximum Operating Temperature: 100 F (38 C)

Maximum Storage Temperature: 150 F (66 C)

Maximum Safe Pressure: 25 psi (172 kPa)

Pneumatic thermostat with night setback used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems. Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

- Durable TP970 series thermostat
- Pilot operated for high capacity.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Three-pipe thermostats are available for unit ventilator applications where the outdoor damper must operate when the thermostat is manually set to day operation.
- Adapter plate in thermostat kits covers existing thermostat watermark.
- Backplate has molded air connections-no separate fittings needed.
- Universal Locking cover with satin chrome finish and horizontal, vertical, or blank window options-other covers available.

Remote Bulb: No

Sensor Element: Bimetal

Throttling Range: (2 F to 10 F (factory set 4 F)

(1 C to 5 C (factory set 2 C))

Type: Thermostat

Accessories:

14002374-004 Restrictor Block Assembly, 0.005, For 2-Pipe TP970 Series Thermostats.

14002430-001 Thermostat Guard

14004460-002 Nozzle, Throttling plate and Bimetal Assembly, reverse acting, left side

14004460-001 Nozzle, Throttling Plate and Bimetal Assembly, direct acting, left side

14004447-003 Setpoint Cam Assembly

AK3863 Honeywell Thermostat Tool Kit, TP970/TP900

Replacement Parts:

14001865-001 Filter Cartridge Assembly

Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP971A2003	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971A2011	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi	2	Day/Night	Day: 15 C to 30 C, Night: 10 C to 26 C	—	Order Cover Separately
TP971A2029	Direct Acting Heating, two temp.	Day 16 psi, Night 21 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971A2052	Direct Acting Heating, two temp.	Day 16 psi, Night 21 psi	2	Day/Night	Day: 15 C to 30 C, Night: 10 C to 26 C	—	Order Cover Separately
TP971A2086	Direct Acting Heating, two temp.	Day 20 psi, Night 25 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971A2102	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi or 16-20 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover.
TP971A2183	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi or 16-20 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Convertastat™ Kit	Thermostat, small wall plate and beige cover.
TP971A2191	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi or 16-21 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Tradeline Kit	Thermostat and satin chrome cover.
TP971B2001	Reverse Acting Heating, two temp.	Day 13 psi, Night 18 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971B2019	Reverse Acting Heating, two temp.	Day 16 psi, Night 21 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971B2043	Reverse Acting Heating, two temp.	Day 20 psi, Night 25 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	—	Order Cover Separately
TP971B2068	Reverse Acting Heating, two temp.	Day 13 psi, Night 18 psi or 16-21 psi	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Tradeline Kit	Thermostat and satin chrome cover.

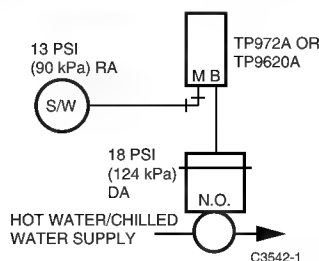
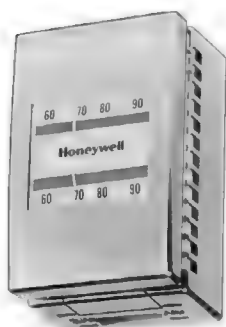
Pneumatic Thermostats

Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP971C2009	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi	3	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Has secondary branch line	Order Cover Separately
TP971C2017	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi	3	Day/Night	Day: 15 C to 30 C, Night 10 C to 26 C	Has secondary branch line	Order Cover Separately
TP971C2025	Direct Acting Heating, two temp.	Day 16 psi, Night 21 psi	3	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Has secondary branch line	Order Cover Separately
TP971C2058	Direct Acting Heating, two temp.	Day 13 psi, Night 18 psi or 16-21 psi	3	Day/Night	Day: 60 F to 90 F, Night: 50 F to 80 F	Tradeline Kit. Has secondary branch line.	Thermostat and satin chrome cover

** A **Tradeline Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) for new installations or to convert newer, small size Honeywell or competitor thermostat, not requiring a wall plate adapter.

A **Convertastat™ Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) and a small Universal Wall Plate Adapter to convert newer, small size Honeywell or competitor thermostats.

TP972 Pneumatic Heating/Cooling Thermostat



Application Type: Wall Thermostat, Heat/Cool Operation

Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep
(83 mm high, 51 mm wide, 41 mm deep)

Airflow Usage: 0.011 scfm (5.2 mL/s)

Maximum Operating Temperature: 100 F (38 C)

Maximum Storage Temperature: 150 F (66 C)

Two-pipe, one- or two-temperature, pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems.

Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell two-pipe pneumatic thermostats.

- Durable TP970 Series Thermostat.
- Pilot operated for high capacity.
- Two-temperature energy conservation model available.
- Adapter plate in Convertastat™ kits covers existing thermostat wallmark.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options with Tradeline model-other covers available.

Maximum Safe Pressure: 25 psi (172 kPa)

Remote Bulb: No

Sensor Element: Bimetal

Throttling Range: 2 F to 10 F (1 C to 5 C)

Accessories:

14002374-004 Restrictor Block Assembly, 0.005, For 2-Pipe TP970 Series Thermostats.

14002430-001 Thermostat Guard

14003923-001 20 to 25 psi spring

14004460-001 Nozzle, Throttling Plate and Bimetal Assembly, direct acting, left side

14004460-002 Nozzle, Throttling plate and Bimetal Assembly, reverse acting, left side

14004447-002 Setpoint Cam Assembly

AK3863 Honeywell Thermostat Tool Kit, TP970/TP900

Replacement Parts:

14001865-001 Filter Cartridge Assembly

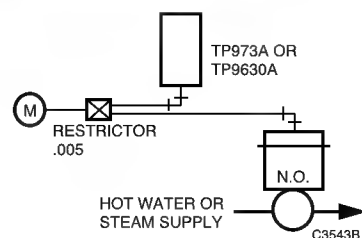
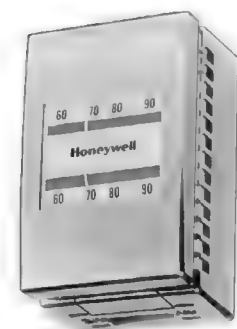
Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP972A2002	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Single	60 F to 90 F	—	Order Cover Separately
TP972A2010	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Single	15 C to 30 C	—	Order Cover Separately
TP972A2036	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Dual	Heating 50 F to 75 F Cooling 60 F to 90 F	Two concealed setpoint knobs	Energy Conservation Model, Order Cover Separately
TP972A2143	Direct Acting Heating, Reverse Acting Cooling	Heat 14 psi, Cool 19 psi	2	Single	60 F to 90 F	—	Order Cover Separately
TP972A2192	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Single	60 F to 90 F	Convertastat™ Kit	Thermostat, small wall plate and satin chrome cover
TP972A2226	Direct Acting Heating, Reverse Acting Cooling	Heat 14 psi, Cool 19 psi	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and satin chrome cover.
TP972A2242	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi, Cool 13 psi	2	Single	60 F to 90 F	Tradeline Kit	Thermostat and satin chrome cover.

** A **Tradeline Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) for new installations or to convert newer, small size Honeywell or competitor thermostat, not requiring a wall plate adapter.

A **Convertastat™ Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) and a small Universal Wall Plate Adapter to convert newer, small size Honeywell or competitor thermostats.

Pneumatic Thermostats

TP973 Pneumatic Thermostat



Application Type: Wall Thermostat, Single Temperature
Dimensions, Approximate: 3 1/4 in. high, 2 in. wide, 1 5/8 in. deep
 (83 mm high, 51 mm wide, 41 mm deep)
Airflow Usage: 0.011 scfm (5.2 mL/s)
Maximum Operating Temperature: 100 F (38 C)
Maximum Storage Temperature: 150 F (66 C)
Maximum Safe Pressure: 25 psi (172 kPa)
Remote Bulb: No

One- or two-pipe, single temperature, low capacity, pneumatic thermostat used to provide proportional control of pneumatic valves and damper actuators in heating and air conditioning systems.

Replacement kits are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell pneumatic thermostats.

- Durable TP970 Series Thermostat.
- Direct Acting (DA) and Reverse Acting (RA) models are available.
- Backplate has molded air connections-no separate fittings needed.
- Universal locking cover with satin chrome finish and horizontal, vertical, or blank window options available. Other Covers Available.
- Low capacity thermostat.
- Built in restrictor for two-pipe applications.

Sensor Element: Bimetal

Throttling Range: 2 F to 10 F (1 C to 5 C)

Accessories:

14002430-001 Thermostat Guard

AK3863 Honeywell Thermostat Tool Kit, TP970/TP900

14004459-001 Scaleplate Bag Assembly, 60 to 90 F, TP970A-D, TP973A,B.

14002913-001 .005 IN. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10.

14002913-004 Pneumatic External Restrictor, 0.005", Blue, Inlet: 1/4 in., Outlets: 5/32 inch and 5/32 inch

Replacement Parts:

14002374-004 Restrictor Block Assembly, 0.005, For 2-Pipe TP970 Series Thermostats.

14004460-001 Nozzle, Throttling Plate and Bimetal Assembly, direct acting, left side

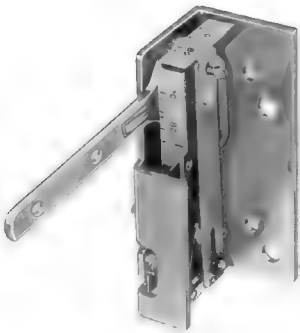
14004460-002 Nozzle, Throttling plate and Bimetal Assembly, reverse acting, left side

14001865-001 Filter Cartridge Assembly

Product Number	Action	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments**	Includes
TP973A2076	Direct Acting	1 or 2	Single	60 F to 90 F	For one-pipe order an external 0.005 in. restriction	Order Cover Separately
TP973A2084	Direct Acting	1 or 2	Single	15 C to 30 C	For one-pipe order an external 0.005 in. restriction	Order Cover Separately
TP973A2167	Direct Acting	1 or 2	Single	60 F to 90 F	For one-pipe order an external 0.005 in. restriction	Thermostat and cover # 14004407-121
TP973A2175	Direct Acting	1 or 2	Single	60 F to 90 F	For one-pipe order an external 0.005 in. restriction	Thermostat and cover # 14004407-300
TP973A2209	Direct Acting	1 or 2	Single	60 F to 90 F	Tradeline Kit. For one-pipe application-order an external 0.005 in. restriction	Thermostat and satin chrome cover
TP973A2223	Direct Acting	1 or 2	Single	60 F to 90 F	Tradeline Kit. For one-pipe application-order an external 0.005 in. restriction	Thermostat and beige cover
TP973B2066	Reverse Acting	1 or 2	Single	60 F to 90 F	For one-pipe order an external 0.005 in. restriction	Order Cover Separately
TP973B2074	Reverse Acting	1 or 2	Single	15 C to 30 C	For one-pipe order an external 0.005 in. restriction	Order Cover Separately
TP973B2132	Reverse Acting	1 or 2	Single	60 F to 90 F	For one-pipe order an external 0.005 in. restriction	Thermostat and cover # 14004407-121
TP973B2171	Reverse Acting	1 or 2	Single	60 F to 90 F	Tradeline Kit. For one-pipe application-order an external 0.005 in. restriction	Thermostat and satin chrome cover

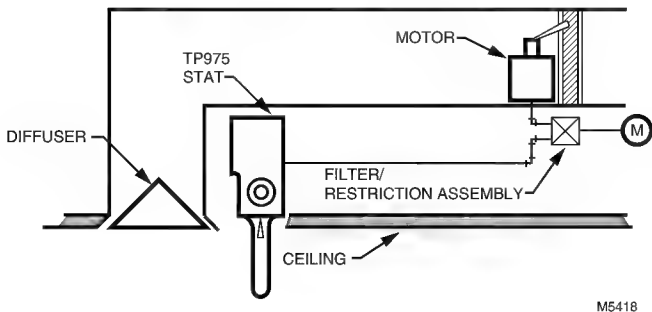
** A **Tradeline Kit** includes a TP970 Series thermostat with either a Satin Chrome or Beige Universal Cover, Windows (horizontal (F), vertical (F) and blank) for new installations or to convert newer, small size Honeywell or competitor thermostat, not requiring a wall plate adapter.

TP975 Pneumatic Diffuser Thermostat



One-pipe, single temperature, low-capacity pneumatic thermostat used to provide proportional control of pneumatic valves and mixing boxes in heating and air conditioning systems. It mounts in a slot or light troffer diffuser or a return air grill.

- Two-way setpoint indicator for vertical or horizontal mounting.
- Detents in 1 F (0.5 C) increments for blind operation.



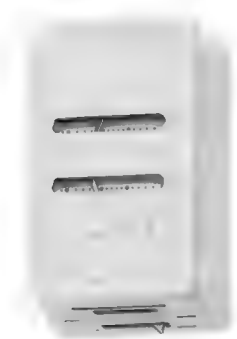
Application Type: Single temperature, low capacity, pneumatic thermostat
Dimensions, Approximate: 1 in. high, 2 1/2 in. wide, 1 1/8 in. deep (25 mm high, 63 mm wide, 27 mm deep)
Airflow Usage: 0.011 scfm (5.2 mL/s)
Maximum Operating Temperature: 110 F (43 C)
Maximum Storage Temperature: 150 F (66 C)
Remote Bulb: No
Sensor Element: Bimetal
Throttling Range: (2 F to 10 F (1 C to 5 C)
Type: Diffuser Thermostat

Accessories:
14002913-004 Pneumatic External Restrictor, 0.005", Blue, Inlet: 1/4", Outlets: 5/32" and 5/32"

Product Number	Action	Number of Pipes	Setpoint	Setpoint Temperature Range	Comments
TP975A1009	Direct Acting	1	Single	67 F to 83 F; 15 C to 30 C	Requires external 0.005 in. restrictor

Pneumatic Thermostats

TP9600 Pneumatic Thermostat



Application Type: Wall Thermostat

Dimensions, Approximate: (83 mm high, 51 mm wide, 41 mm deep)
3 1/4 in. high, 2 in. wide, 1 5/8 in. deep

Airflow Usage: 0.011 scfm (5.2 mL/s)

Air Connections: Barb fittings 5/32 in. (4 mm)

Operating Temperature Range: 50 F to 100 F (10 C to 38 C)

Maximum Storage Temperature: 150 F (66 C)

Maximum Operating Pressure: 25 psi (172 kPa)

Remote Bulb: No

Sensor Element: Bimetal

Throttling Range: 2 F to 10 F (1 C to 5 C)

Type: Thermostat

Pneumatic thermostat for proportional control of pneumatic valves and actuators with one- or two-pipe systems. Available with two cover options, the TP9600 is not only affordable and easy to install, but it controls temperature with the reliability that only Honeywell can provide.

- TP9600 delivers the Honeywell TP970s unparalleled sensing and control.
- Redesigned models fit your high-volume pneumatic applications.
- Backplate mounts quickly.
- Thermostat snaps onto backplate.
- Cover is mounted and locked into place with concealed setscrews.
- Attractive Euro-contoured design comes with choice of two cover options.
- Neutral taupe color blends with today's commercial interiors.
- Adapter kits are available to retrofit most pneumatic jobs.
- Branch line capacity Low for TP9630 and TP9633
- Branch line capacity High for TP9600, TP9610, TP9603, TP9620.

Accessories:

AK3970 Cover for Aspirator Boxes 14002424-002 and 14002424-003

305965 Pressure Gage 0 to 30 psi, 1 1/2 in. 1/8 NPT center back

14004439-001 Setpoint Extension

14004911-001 Adaptor Plate

14002424-002 Aspirator Box

14002430-001 Thermostat Guard

CCT735A Thermostat Calibration Tool includes Allen wrench for cover installation.

Replacement Parts:

14001865-001 Filter Cartridge Assembly

14002053-001 Back Plate Assembly

14002573-001 TP970 1 and 2 Pipe Modernization Kit

14003192-001 Modernization Kit

Product Number	Action	Changeover Pressure	Number of Pipes	Setpoint	Setpoint Temperature Range	Includes
TP9600A1007	Direct Acting	—	2	Single	60 F to 90 F	Cover, Setpoint, and Thermometer are Visible
TP9600B1006	Reverse Acting	—	2	Single	60 F to 90 F	Cover, Setpoint, and Thermometer are Visible
TP9603A1001	Direct Acting	—	2	Single	60 F to 90 F	Blank Cover, Setpoint, and Thermometer are Not Visible
TP9610A1006	Direct Acting	Day 13 psi (90 kPa), Night 18 psi (124 kPa)	2	Day/Night	Day: 60 F to 90 F, Night: 50 F to 75 F	Cover, Setpoint, and Thermometer are Visible
TP9620A1005	Direct Acting Heating, Reverse Acting Cooling	Heat 18 psi (124 kPa), Cool 13 psi (90 kPa)	2	Single	60 F to 90 F	Cover, Setpoint, and Thermometer are Visible
TP9630A1004	Direct Acting	—	1 or 2	Single	60 F to 90 F	Cover, Setpoint, and Thermometer are Visible
TP9630B1003	Reverse Acting	—	1 or 2	Single	60 F to 90 F	Cover, Setpoint, and Thermometer are Visible

Pneumatic Thermostat Accessories

OS Number	Description	Used With
314820	Restrictor Plate for LP916	LP916
14001090-001	Scaleplate	—
14001491-002	2 Pipe Airhead	TP9600
14001494-002	2 Pipe Airhead Assembly	—
14001614-001	Shallow Wall Box	—
14001615-002	2 Copper Tube Ppk	—
14001616-002	Stat Ftg Plastic	—
14001918-001	Plug	—
14002053-001	Back Plate Assembly	TP9600
14002136-004	Trim plate, black.	—

Pneumatic Thermostats

OS Number	Description	Used With
14002136-005	Trim plate, beige.	—
14002136-006	Decor Wall Plate	—
14002136-007	Wallplate	—
14002172-001	Gage Tap repair Plug	—
14002362-001	Duct Sampling Chamber	—
14002373-001	Switchover Springs 16 To 21 Psi	TP972
14002390-001	Bag Assembly	—
14002424-002	Aspirator Box	TP9600
14002424-003	Aspirator Box	—
14002430-001	Thermostat Guard	TP9600, TP970, TP971, TP972, TP973
14002573-001	TP970 1 and 2 Pipe Modernization Kit	TP9600
14002573-002	TP970 1 and 3 Pipe Modernization Kit	—
14002636-001	Boxed Wall Plate	—
14003113-002	Repair kit containing 0.007 in. restrictor plate, filters, and gaskets for pre-1984 units	LP916
14003192-001	Wall Plate Adapter Kit	TP9600
14003203-001	Bag assembly	—
14003203-003	Conversion Kit	—
14003925-002	Cover Assembly	—
14003929-001	B1-metal Tp928	—
14004056-001	Cover Assembly	—
14004056-003	Cover Assembly	—
14004056-005	Cover Assembly	—
14004056-007	Cover Assembly	—
14004056-008	Cover	—
14004068-001	Mtg Hardware	—
14004193-001	Stand-off Ring	—
14004376-001	Gasket for 14004378 Connector Assembly	LP916
14004378-002	Connector Assembly, with integral 0.005 in. restriction and filters for post 1984 units	LP916
14004401-002	Convertastat™ Wallplate	—
14004402-001	Thermostat Cover chrome	—
14004405-004	Window	—
14004419-001	Restrictor Block Gasket	TP972, TP970, TP971, TP979
14004437-001	Insert Cover	—
14004438-001	Insert Cover	—
14004438-002	Insert Cover	—
14004439-001	Setpoint Extension	—
14004441-001	Scaleplate Inserts	—
14004441-002	4 scaleplates for satin chrome TP970 plastic cover with screws for Convertastat™™ wallplate 14004401-002	—
14004447-001	Setpoint Cam Assembly for direct acting stat TP970A in TP979	TP970A, TP970C, TP972A2143, TP979A
14004447-002	Setpoint Cam Assembly	TP979B, TP970B, TP970D, TP972A2002, TP972A2010, TP973B2108
14004447-003	CAm Assembly	TP973B2108, TP971A, TP971C, TP971D
14004447-005	Setpoint Cam Assembly	—
14004458-001	Standoff Ring	—
14004459-001	Scaleplate Bag Assembly, 60 to 90 F, TP970A-D, TP973A,B.	TP970, TP973, TP979

Pneumatic Thermostats

OS Number	Description	Used With
14004460-001	Nozzle, Throttling Plate and Bimetal Assembly, direct acting, left side	TP970A, TP971A, C, D, TP972 DA, left side, TP973A, TP979A
14004460-002	Nozzle, Throttling plate and Bimetal Assembly, reverse acting, left side	TP970B, TP971B, TP972 RA, left side, TP973B, TP979B
14004505-001	Connector	—
14004558-001	Six inch main red Tube-Spring Assembly	TP970
14004729-002	TP970 Cover Screw	—
14004756-001	Dual Cover Assembly; Satin Chrome	—
14004756-002	Dual Cover Assembly; Satin Chrome	—
14004756-003	Dual Cover Assembly; Satin Chrome	—
14004756-005	Dual Cover Assembly; Satin Chrome	—
14004756-007	Dual Cover Assembly; Satin Chrome	—
14004756-008	Dual Cover Assembly; Satin Chrome	—
14004757-001	Dual Cover Assembly; Beige Chrome	—
14004757-005	Dual Cover Assembly; Beige Chrome	—
14004757-007	Dual Cover Assembly; Beige Chrome	—
14004757-008	Dual Cover Assembly; Beige Chrome	—
14004787-910	Thermostat Cover Kit; Bright Chrome Finish	TP970
14004789-111	Thermostat Cover Kit - Bright Brass	—
14004878-700	Thermostat Cover Kit - Premier White	—
14004908-001	Stop Kit	—
14004910-001	Thermostat Cover	—
14004910-004	Thermostat Cover	—
14004911-001	Adaptor Plate	—
14004932-001	Adapter Kit	—
311631	O-ring V5011-581	—
311699	Tubing Spring,	LP916
315945A	Channel Assembly	—
14004401-004	Adaptor Plate For Convertastat™™, Beige	TP970
315949	Scaleplate Tp928	—

Pneumatic Thermostat Replacement Parts

OS Number	Description	Used With
14000686-002	Two-pipe angled red connector	TP970
14000742-002	Two-pipe straight red connector	TP970
14001527-001	Three pipe straight white connector	TP970
14001865-001	Filter Cartridge Assembly	TP9600, TP970 TP971, TP972, TP973, TP979
14003923-001	20 to 25 psi	TP970
303627	Gasket LP901	LP901
14002420-001	Mounting. Plate assembly, with mounting plate (14002421-001), 4 clips (14002422-001), 4 rivets (305835)	TP970
14002374-006	Package assembly-repair [plate assembly-rest] 4 screw machine (14002281-001), plate assembly, rest (14002479-009), gasket (14004419-001).	TP970
14000685-002	Spring - stainless steel spring wire, cold-drawn, 4 27/32 long	TP970
14001957-001	Plug, BLP Tap,	TP970
14002111-021	Amber Acrylic Window	TP970
14002111-024	Window art work cover plate range 40 to 70	TP970

Pneumatic Thermostats

OS Number	Description	Used With
14002124-001	Pointer, all corner RADII 0.005 max	TP970
14004405-003	Window thermostat with two opaque windows, gray background, logo in middle	TP970
14004405-005	Window thermostat with scale indicator of 60 to 90 F, two clear windows, gray background, Honeywell logo in middle.	TP970
14004405-010	Window thermostat with bottom scale only of 60 to 90 F, blue logo	TP970
14004405-014	Window thermostat with two opaque windows, Grey background, black logo, black vertical cooler & warmer on bottom	TP970
14004405-101	Window Thermostat with Beige, Blue Logo in middle	TP970
14004405-113	Window thermostat with two opaque windows, scale range 60 to 90 F in black,	TP970
14004406-114	Thermostat cover assembly satin chrome, with assembly cover [chrome](14004402-001), window thermostat (14004405-019) vertical mount with day/auto slot open, Honeywell signature, heat range/cool range 60-90 F	TP970
14004406-210	Thermostat Cover assembly satin chrome, with cover (chrome) [14004402-001], cover insert, day-auto (14004437-001), window thermostat (14004405-016) Horizontal Mount, setpoint display 15-30 C, thermometer display 15-30 C	TP970
14004406-901	Thermostat Cover Assembly satin chrome with assembly-cover [chrome] (14004402-001), window thermostat (14004405-020)	TP970
14004407-124	Thermostat cover assembly, Beige plastic with assembly-cover [beige] (14004402-002), window thermostat (14004405-107) vertical mount with day/auto slot open, setpoint open, setpoint display only, range 15-75% RH	TP970
14004407-210	Thermostat cover assembly, Beige plastic with cover [beige] (14004402-002), cover insert, day-auto (14004437-002), window thermostat (14004405-105) Horizontal mount, day/auto slot open, setpoint slot open, Honeywell signature, setpoint display and thermome	TP970
14004429-002	Cam, reverse acting, double cam lobes, black	TP970
14004447-006	assembly Cam with Cam (14004429-001), bushing (14002025-001), Screw (14004444-001)	TP970
14004447-007	assembly Cam with cam (14004429-002), Bushing (14002025-001), Screw (14004444-001)	TP970
14004459-005	Repair plate assembly with therm. assembly (14004440-001), pointer (14002124-001), scale plate (14004434-003), post therm assembly (14004445-001), and plastic box (14004645-002).	TP970
14004460-003	Package assembly-repair (Bracket) with Bracket assembly (14002387-004), Box, Plastic (14004645-002)	TP970
14004610-001	Zinc plate metal stud Adapter	TP970
14002373-002	Repair spring package assembly. Includes: screw - 14001990-001, and 2 springs - 14002034-001	TP971

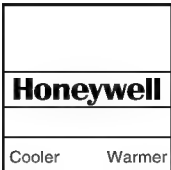
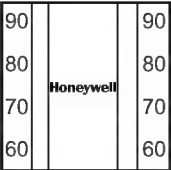

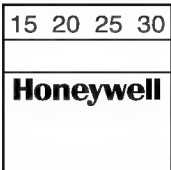
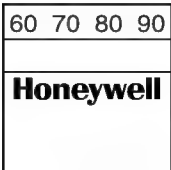
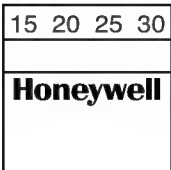
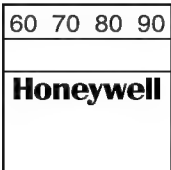
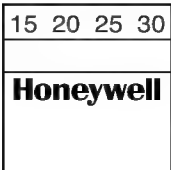
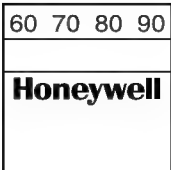
Pneumatic Thermostats

TP970 and TP9600 Accessories


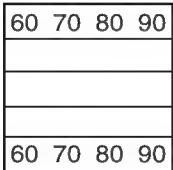
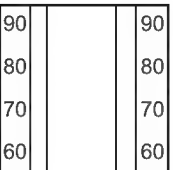
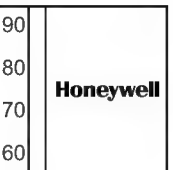
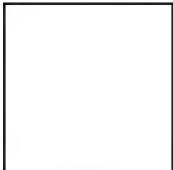

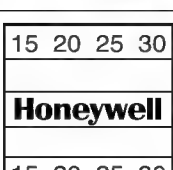
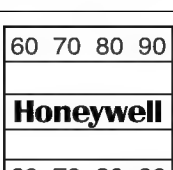


OS Number	Description	Comments						
14004406-110	Celsius scale (15 C to 30 C) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>15 20 25 30</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>15 20 25 30</td></tr></table>	15 20 25 30		Honeywell		15 20 25 30
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14004406-111	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>60 70 80 90</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>	60 70 80 90		Honeywell		60 70 80 90
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14004406-112	Fahrenheit scale (40 F to 70 F) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>40 50 60 70</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>40 50 60 70</td></tr></table>	40 50 60 70		Honeywell		40 50 60 70
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14004406-115	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting Display has large scale numbers for the visually impaired.	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>60 70 80 90</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>	60 70 80 90		Honeywell		60 70 80 90
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14004406-120	Celsius scale (15 C to 30 C) Satin Chrome Thermostat Cover Kit with setpoint slot and Honeywell logo for vertical mounting. (No Thermometer display)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>15 20 25 30</td></tr></table>			Honeywell		15 20 25 30
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14004406-121	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with setpoint slot and Honeywell logo for vertical mounting. (No Thermometer display)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>			Honeywell		60 70 80 90
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14004406-122	Fahrenheit scale (40 F to 70 F) Satin Chrome Thermostat Cover Kit with setpoint slot and Honeywell logo for vertical mounting. (No Thermometer display)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>40 50 60 70</td></tr></table>			Honeywell		40 50 60 70
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Pneumatic Thermostats

OS Number	Description	Comments	
14004406-123	Satin Chrome Thermostat Cover Kit with setpoint slot and Honeywell logo for vertical mounting with Warmer/Cooler Scale	See Specification Data sheet, Form No. 77-1003 for details	
14004406-211	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermostat and setpoint slots and Honeywell logo for horizontal mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-300	Satin Chrome Thermostat Cover Kit with Honeywell logo for vertical mounting (No slots)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-310	Celsius scale (15 C to 30 C) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-311	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-320	Celsius scale (15 C to 30 C) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-321	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-330	Celsius scale (15 C to 30 C) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004406-331	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	

Pneumatic Thermostats

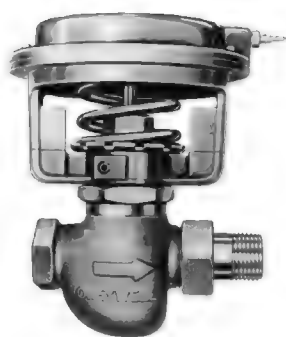
OS Number	Description	Comments	
14004406-400	Satin Chrome Thermostat Cover Kit with Honeywell logo for horizontal mounting (No slots)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-511	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots for vertical mounting (no logo)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-611	Fahrenheit scale (60 F to 90 F) Satin Chrome Thermostat Cover Kit with Thermometer display and setpoint slots for horizontal mounting (no logo)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-711	Fahrenheit scale Satin Chrome Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) for vertical mounting (no logo)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-800	Satin Chrome Thermostat Cover Kit for horizontal mounting (No slots and no logo)	See Specification Data sheet, Form No. 77-1003 for details	
14004406-910	Thermostat Cover Kit - Satin Chrome for Fahrenheit scale	See Specification Data sheet, Form No. 77-1003 for details	
14004407-110	Celsius scale (15 C to 30 C) Beige Plastic Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	
14004407-111	Fahrenheit scale (60 F to 90 F) Beige Plastic Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	

Pneumatic Thermostats

OS Number	Description	Comments						
14004407-113	Fahrenheit scale (60 F to 90 F) Beige Plastic Thermostat Cover Kit with Thermometer display and setpoint slots and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>60 70 80 90</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>	60 70 80 90		Honeywell		60 70 80 90
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14004407-121	Fahrenheit scale (60 F to 90 F) Beige Plastic Thermostat Cover Kit with setpoint slot and Honeywell logo for vertical mounting. (No Thermometer display)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>		Honeywell		60 70 80 90	
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14004407-300	Beige Plastic Thermostat Cover Kit with Honeywell logo for vertical mounting (No slots)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr></table>		Honeywell			
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14004407-311	Fahrenheit scale (60 F to 90 F) Beige Plastic Thermostat Cover Kit with Thermometer display slot (setpoint slot closed) and Honeywell logo for vertical mounting	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>60 70 80 90</td></tr><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr></table>	60 70 80 90		Honeywell		
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14004407-511	Fahrenheit scale (60 F to 90 F) Beige Plastic Thermostat Cover Kit with Thermometer display and setpoint slots for vertical mounting (no logo)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td>60 70 80 90</td></tr><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr><tr><td>60 70 80 90</td></tr></table>	60 70 80 90				60 70 80 90
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14004407-800	Beige Plastic Thermostat Cover Kit for horizontal mounting (No slots and no logo)	See Specification Data sheet, Form No. 77-1003 for details	<table><tr><td></td></tr><tr><td>Honeywell</td></tr><tr><td></td></tr></table>		Honeywell			
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Pneumatic Integral Valves

VP512 Unit Vent Pneumatic Control Valve

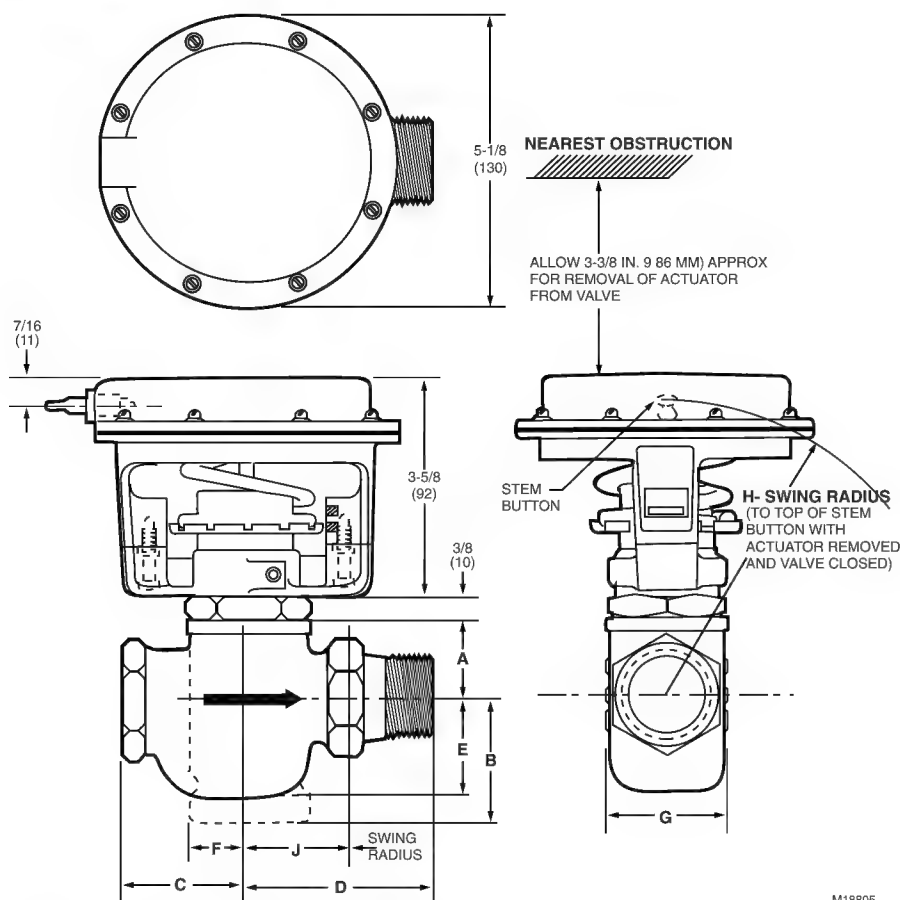


A normally open, single seated, straight-through or angle globe valve used for proportional control of steam or hot water in unit ventilator applications.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices

- Equal percentage, high lift throttling guide provides accurate control over wide load variations.
- Molded replaceable composition disc for tight shut-off.
- Replaceable brass seat.
- Self-adjusting, spring-loaded Teflon™ packing.
- Back-seating allows repacking without shutting down or draining system.
- Rotatable actuator for aligning air connection with control air piping.
- Integral union connection to simplify installation and service.

Dimension Diagram

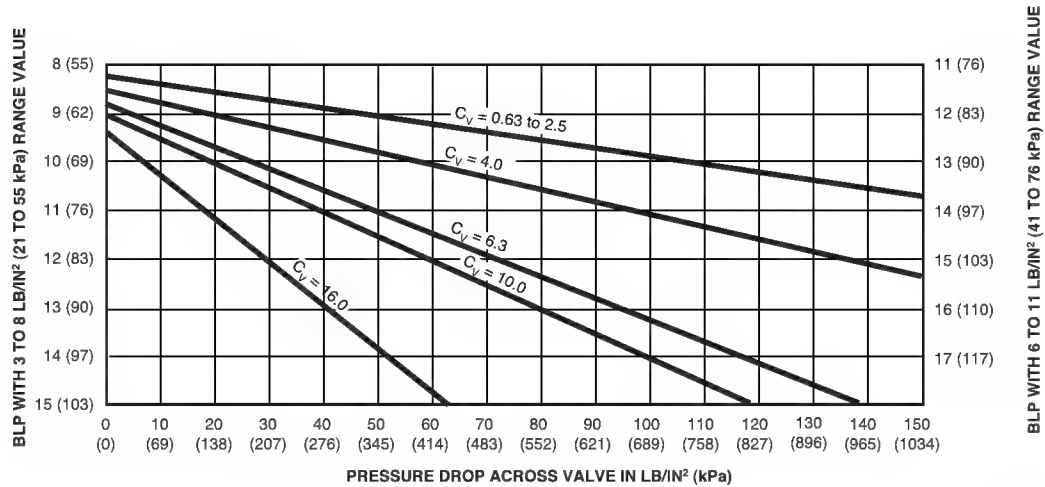


M18805

VP512A Approximate Dimensions in in. (mm).

Valve Size	Body Type	A	B	C	D	E	F	G	H	J
1	Straight	1-3/8 (35)	—	2-1/4 (57)	3 (76)	1-5/8 (41)	—	1-31/32 (50)	4-1/2 (114)	—
	Angle	1-3/8 (35)	2-1/8 (54)	—	3 (76)	—	1-1/16 (27)	1-31/32 (50)	—	1-29/32 (48)
1-1/4	Straight	1-9/16 (40)	—	2-1/2 (64)	3-3/4 (95)	1-1/2 (38)	—	2-9/16 (65)	4-13/16 (122)	—
	Angle	1-9/16 (40)	2-1/8 (54)	—	3-3/4 (95)	—	1-3/16 (30)	2-9/16 (65)	—	2-15/32 (63)

Pneumatic Integral Valves



CLOSE-OFF RATINGS AT VARIOUS BRANCH LINE PRESSURES

M18956

Valve Type: Globe
Body Pattern: 2-way, Straight-through and angle
Dimensions, Approximate: 5 1/8 in. dia., 7 15/32 high
 (127 mm dia., 190 mm high)
Body Pressure: 150 psi
Air Connections: Dual barbed for 5/32 in. or 1/4 in. plastic tubing
Controlled Medium: Water, Steam
Humidity Range: 5 to 95% RH
Temperature Range for Water: 40 F to 240 F

Temperature Range for Steam: 212 F to 337 F
Maximum Actuator Temperature: 160 F
Maximum Temperature Differential for Water: 140 F
Maximum Diaphragm Pressure: 25 psi (172 kPa)

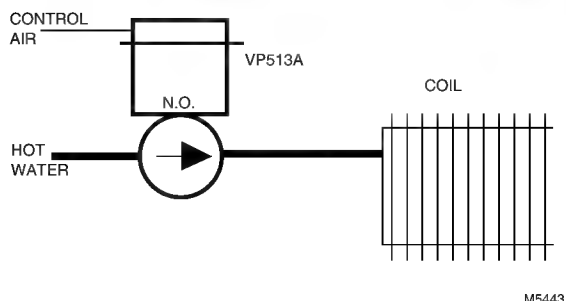
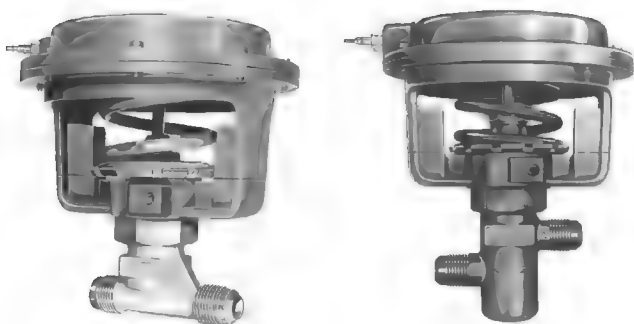
Replacement Parts:

14002863-001 Valve Rebuild Kit for 3/4 to 1 1/4 in valves with CV of 6.3 or 10
14003294-002 Valve Repack Kit, Steam or water application
312817AA Actuator Assembly, 3 to 8 psi, 21 to 55 kPa

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP512A1726	1 in (25 mm)	Outlet - External NPT Union, Inlet - Internal NPT, Straight Through Body	10 Cv	8.57 Kv	70 psi at 13 psi	3 to 8 psi	21 kPa to 55kPa
VP512A1742	1 in (25 mm)	Outlet - External NPT Union, Inlet - Internal NPT, Angled Body	10 Cv	8.57 Kv	70 psi at 13 psi	3 to 8 psi	21 kPa to 55kPa
VP512A1767	1 1/4 in. (32 mm) with 1 in. (25 mm) port	Outlet - External NPT Union, Inlet - Internal NPT, Straight Through Body	16 Cv	13.7 Kv	35 psi at 13 psi	3 to 8 psi	21 kPa to 55kPa
VP512A1783	1 1/4 in. (32 mm) with 1 in. (25 mm) port	Outlet - External NPT Union, Inlet - Internal NPT, Angled Body	16 Cv	13.7 Kv	35 psi at 13 psi	3 to 8 psi	21 kPa to 55kPa

Pneumatic Integral Valves

VP513 Pneumatic Water Valve



Single-seated, straight-through, pneumatic valves used for proportional control of unit air conditioners using hot and/or chilled water.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available in normally-open (A models) or normally-closed models (B models).
- Straight-through pattern.
- Rotating actuator for aligning air connection with control air piping.
- Molded replaceable composition disc for tight shut-off.
- Flare tube connections.
- Small physical size.

Valve Type: Unitary

Body Pattern: Two-way, straight-through

Dimensions, Approximate: 5 3/4 in. high, 5 1/8 in. dia.
(146 mm high, 130 mm dia.)

Body Pressure: 250 psi (1724 kPa)

Air Connections: 1/8 in. NPT

Controlled Medium: Water

Humidity Range: 5 to 95% RH

Maximum Actuator Temperature: 160 F (71 C)

Maximum Diaphragm Pressure: 30 psi (205 kPa)

Temperature Range: 35 F to 250 F (2 C to 121 C)

Replacement Parts:

14002734-002 Lubricant, packing, AMOCO H-100

310143 Packing, 3 Required

310135 Packing Spring, 2 Required

312817T Actuator assembly, 3 to 10 psi, 21 to 69 kPa

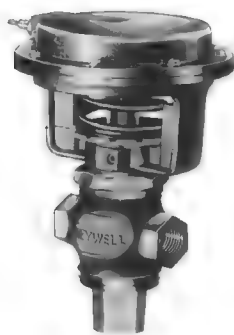
312817U Actuator Assembly, 3 to 7 psi, 21 to 48 kPa

312817V Actuator Assembly, 8 to 12 psi, 55 to 83 kPa

312760 Neoprene Diaphragm - New Style

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP513A1048	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	79 psid (545 kPa) at 13 psi (90 kPa)	3 psi to 10 psi	21 kPa to 69 kPa
VP513A1055	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	45 deg. SAE flare	4 Cv	3.46 Kv	79 psid (545 kPa) at 13 psi (90 kPa)	3 psi to 10 psi	21 kPa to 69 kPa
VP513A1188	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	79 psid (545 kPa) at 13 psi (90 kPa)	3 psi to 7 psi	21 kPa to 48 kPa
VP513A1204	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	79 psid (545 kPa) at 13 psi (90 kPa)	3 psi to 10 psi	21 kPa to 69 kPa
VP513B1012	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	50 psid (345 kPa) at 7 psi (48 kPa)	9 psi to 13 psi	62 kPa to 90 kPa
VP513B1038	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	50 psid (345 kPa) at 7 psi (48 kPa)	9 psi to 13 psi	62 kPa to 90 kPa
VP513B1053	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	50 psid (345 kPa) at 7 psi (48 kPa)	9 psi to 13 psi	62 kPa to 90 kPa

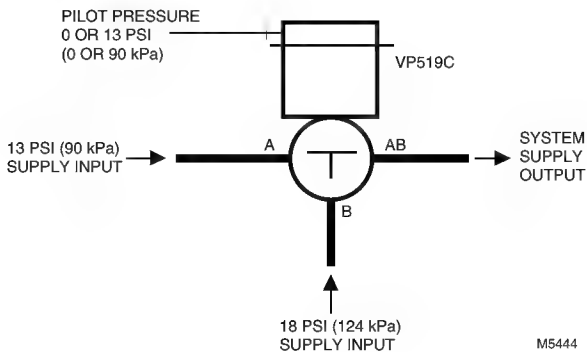
VP519 Two-Position Three-Way Air Valve



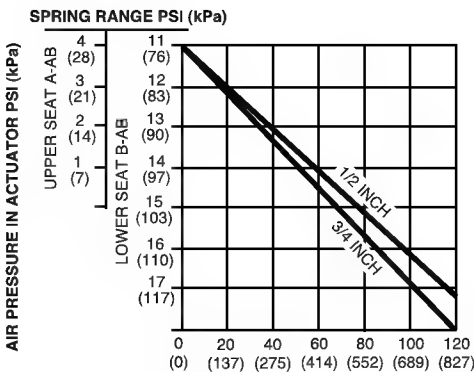
Two-position, three-way, pneumatic air valve used to control main airflow in large Day-Nite or Summer-Winter pneumatic control systems.

Replacement device is available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Spring-loaded, self-adjusting Teflon™ cone packing.
- Removable composition upper and lower discs.
- Actuator can be rotated on valve bonnet for alignment with air piping.
- Right-angle mounting bracket permits mounting on a wall or panel.
- Cast bronze body, 1/4" stroke



M5444



CLOSE OFF PRESSURE RATINGS PSI (kPa)

M18958

Valve Type: Unitary
Body Pattern: 3-way Mixing
Dimensions, Approximate: 7 7/8 in. high, 5 1/8 in. dia.
(200 mm high, 130 mm dia.)
Body Pressure: 150 psi (1034 kPa)
Air Connections: Dual barbed for 5/32 in. or 1/4 in. plastic tubing
Humidity Range: 5 to 95% RH
Maximum Actuator Temperature: 160 F (71 C)

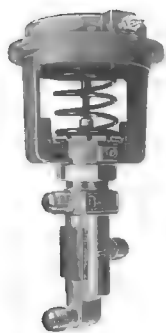
Maximum Diaphragm Pressure: 25 psi (172 kPa)
Temperature Range: 35 F to 115 F (2 C to 46 C)

Replacement Parts:
14003294-002 Valve Repack Kit
312760 Neoprene Diaphragm - New Style
313744A Actuator Replacement Assembly

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP519C1006	1/2 in. (12.7 mm)	NPT	5.5 Cv	4.75 kV	120 psid at 18 psi	6 psi to 9 psi	41 kPa to 62 kPa

Pneumatic Integral Valves

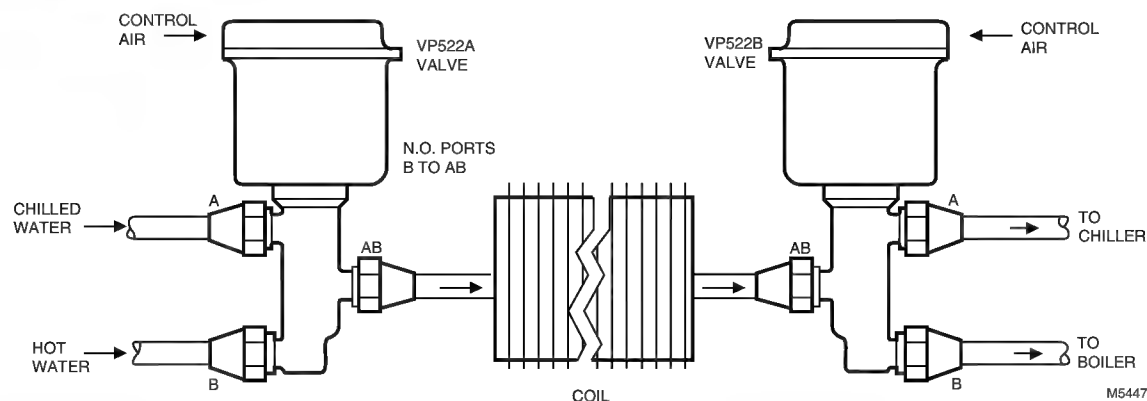
VP522 Pneumatic Sequencing Water Valve



Three-pipe, sequencing, pneumatically operated water valve for controlling both hot and cold water flow in fan-coil and induction units.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Corrosion resistant.
- Molded-in composition discs for tight shutoff.
- Flare connections for easy installation.
- Operator rotates 360 degrees for convenient air piping alignment.



Valve Type: Unitary

Body Pattern: 3-way Mixing

Dimensions, Approximate: 9 7/8 in. high, 5 1/8 in. dia.
(257 mm high, 130 mm dia.)

Body Pressure: 250 psi (1724 kPa)

Air Connections: 1/8 in. NPT

Controlled Medium: Water

Humidity Range: 5 to 95% RH

Maximum Actuator Temperature: 160 F (71 C)

Maximum Diaphragm Pressure: 25 psi (172 kPa)

Temperature Range: 35 F to 250 F (2 C to 121 C)

Replacement Parts:

312760 Neoprene Diaphragm - New Style

312817Y Actuator Assembly, VP522B1011 and VP522B1029

312817S Actuator Assembly, VP522A1047

312817W Actuator Assembly, VP522B1003

313824A Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction, VP522A1005

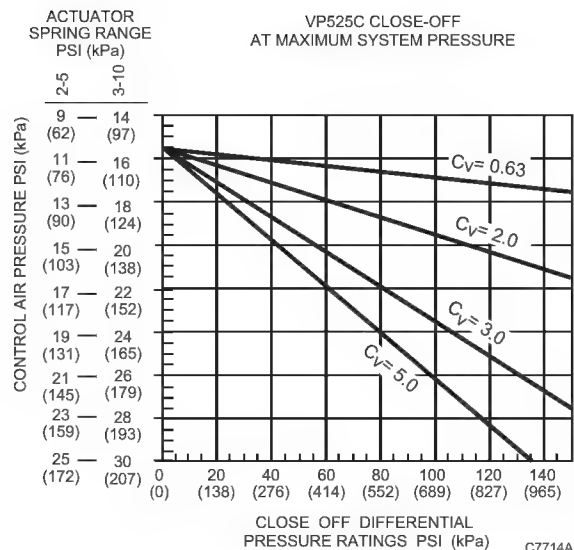
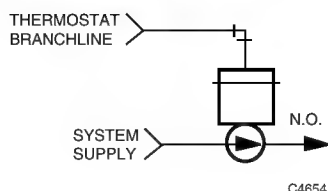
314459A Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction, VP522A1039

314459B Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction, VP522A1047

315407A Rebuild Kit, include Stem and Disc Holder, Button with Screw, Packing and instruction

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP522A1005	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	Port A: 1.5 Cv, Port B: 1.5 Cv	Port A: 1.3 Kv, Port B: 1.3 Kv	50 psid at 13 psi	3 psi to 11.5 psi	21 kPa to 79 kPa
VP522A1039	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	Port A: 2.5 Cv, Port B: 1.6 Cv	Port A: 2.2 Kv, Port B: 1.4 Kv	50 psid at 13 psi	2 psi to 13 psi	14 kPa to 90 kPa
VP522A1047	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	45 deg. SAE flare	Port A: 4 Cv, Port B: 2.5 Cv	Port A: 3.5 Kv, Port B: 2.2 Kv	45 psid at 13 psi	2 psi to 13 psi	14 kPa to 90 kPa
VP522B1003	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	Port A: 1.5 Cv, Port B: 1.5 Cv	Port A: 1.3 Kv, Port B: 1.3 Kv	15 psid at 13 psi	Adjustable	Adjustable
VP522B1011	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	Port A: 2.5 Cv, Port B: 2.5 Cv	Port A: 2.2 Kv, Port B: 2.2 Kv	15 psid at 13 psi	Adjustable	Adjustable
VP522B1029	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	45 deg. SAE flare	Port A: 4 Cv, Port B: 3.5 Cv	Port A: 3.5 Kv, Port B: 3.0 Kv	15 psid at 13 psi	Adjustable	Adjustable

VP525C Pneumatic Radiator Valve



Normally-open, single-seated pneumatic radiator valve with straight through or angle body construction provides proportional control of two-pipe, hot water or steam systems. Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available in several capacities and spring ranges for various application requirements.
- Easily replaceable actuator assembly for convenience of service.
- Compact size for installation where space is limited.
- Can be repacked without shutting down system.

Valve Type: Unitary

Body Pattern: Two-way

Dimensions, Approximate: 4 7/8 in. high, 3 3/4 in. wide (124 mm high, 92 mm wide)

Body Pressure: 150 psi (1034 kPa)

Air Connections: Push on for 1/4 in. O.D. plastic tubing

Controlled Medium: Steam, Water

Humidity Range: 5 to 95% RH

Maximum Safe Actuator Diaphragm Temperature: 230 F (110 C)

Maximum Diaphragm Pressure: 30 psi (205 kPa)

Temperature Range: 40 F to 240 F (4 C to 116 C)

Accessories:

14003648-001 Vandalism Resistant Assembly, cover assembly with 1/8 in NPT air connection and push-in retainer to replace standard cover

Replacement Parts:

316027/0042 Spring 2-5 psi, green

14003300-001 Repair Top and Insert for 7/8 in O.D. Solder Body Valves

14004897-001 Repair Top & Insert for VP525C or Upgrade for VP525A, 1/2 in. NPT Valve 0.63 cv

14004897-002 Repair Top & Insert for VP525C or Upgrade for VP525A, 1/2 in. Valve 2.0 cv

14004897-003 Repair Top & Insert for VP525C or Upgrade for VP525A, 3/4 in. Valve 3.0 cv

14002734-001 Grease Tube

310208 Packing (order three per valve)

315913/0041 Range Spring, 3-10 psi (Orange) for VP525, VP526, VP527, VP531

14002560-013 Repair stem assembly for 0.63 Cv VP525C or to Upgrade 0.63 Cv VP525A

14002560-007 Repair stem assembly for 2.0 Cv VP525C or to Upgrade 2.0 Cv VP525A

14002560-008 Repair stem assembly for 3.0 Cv VP525C or to Upgrade 3.0 Cv valves

14002560-009 Repair stem assembly for 5.0 Cv VP525C or to Upgrade 5.0 Cv VP525A

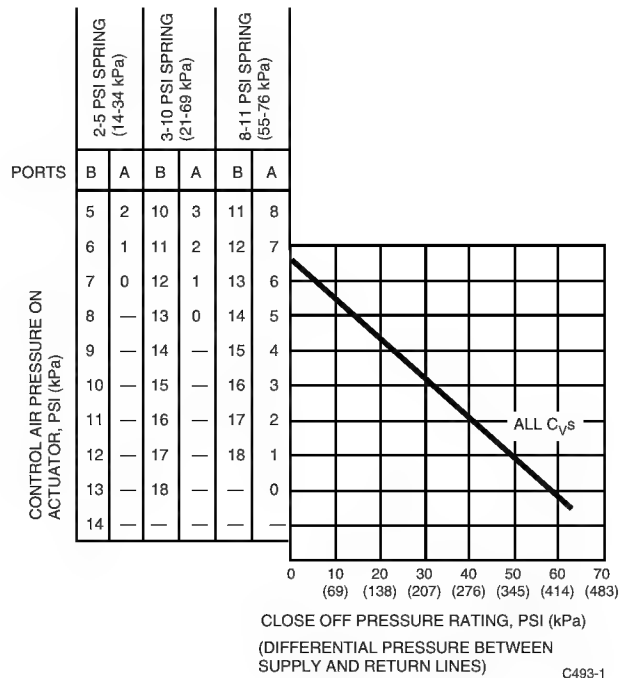
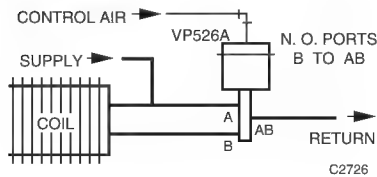
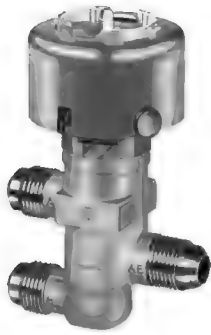
14004897-004 Repair Top & Insert for VP525C or Upgrade for VP525A, 3/4 in. Valve 5.0 Cv

Pneumatic Integral Valves

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure*	Spring Range		Comments	Includes
			Cv	Kv		(psi)	(kPa)		
VP525C1008	1/2 in. (12.7 mm)	NPT-Straight Male Union	0.63 Cv	0.54 Kv	150 psid (1034 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1408	2-5 psi spring is packed in box
VP525C1016	1/2 in. (12.7 mm)	NPT-Straight Male Union	2 Cv	1.73 Kv	110 psid (759 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1077 and VP525A1416	2-5 psi spring is packed in box
VP525C1024	3/4 in. (19.1 mm)	NPT-Straight Male Union	3 Cv	2.59 Kv	55 psid (379 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1150	2-5 psi spring is packed in box
VP525C1032	3/4 in. (19.1 mm)	NPT-Straight Male Union	5 Cv	4.32 Kv	42 psid (290 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1192 and VP525A1200	2-5 psi spring is packed in box
VP525C1040	1/2 in. (12.7 mm)	NPT- Angle Male union	2 Cv	1.73 Kv	110 psid (759 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1085	2-5 psi spring is packed in box
VP525C1057	3/4 in. (19.1 mm)	NPT- Angle Male union	3 Cv	2.59 Kv	55 psid (379 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1168	2-5 psi spring is packed in box
VP525C1065	3/4 in. (19.1 mm)	NPT- Angle Male union	5 Cv	4.32 Kv	42 psid (290 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1218 and VP525A1226	2-5 psi spring is packed in box
VP525C1081	1/2 in. (12.7 mm)	NPT- Angle Male union	3 Cv	2.59 Kv	55 psid (379 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1127 and VP525A1135	2-5 psi spring is packed in box
VP525C1073	1/2 in. (12.7 mm)	NPT-Straight Male Union	3 Cv	2.59 Kv	55 psid (379 kPa) at 20 psi (138 kPa)	3 psi to 10 psi	21 kPa to 69 kPa	Replacement for VP525A1101 and VP525A1119	2-5 psi spring is packed in box

* Close-off Pressure Rating using a 3 to 10 psi (21 to 69 kPa) spring

VP526 Three-Way High Pressure Water Valve



Three-way pneumatic mixing valve provides proportional control of hot and/or cold water in unit air conditioners and fan coil systems.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Small size permits installation where space is limited.
- Direct-acting, rolling diaphragm actuator with integral high temperature plastic air connector for 1/4 in. (6-mm) O.D. plastic tubing.
- Spring loaded, self-adjusting Buna-N "V"-ring packing replaceable.
- Brass seats (integral lower, removable upper) and contoured plug provide metal-to-metal seating.
- Stainless steel stem.
- Linear and constant total flow throughout full plug travel.

Valve Type: Unitary

Body Pattern: 3-way Mixing

Dimensions, Approximate: 4 7/8 in. high, 3 1/8 in. wide (124 mm high, 79 mm wide)

Body Pressure: 250 psi (1724 kPa)

Air Connections: Push on for 1/4 in. O.D. plastic tubing

Controlled Medium: Water

Humidity Range: 5 to 95% RH

Maximum Safe Actuator Diaphragm Temperature: 230 F (110 C)

Maximum Diaphragm Pressure: 29 psi (200 kPa)

Temperature Range: 35 F to 250 F (2 C to 121 C)

Accessories:

CCT3833 Valve Seat Removal Wrench for 1/2 in. VP526 Valves

14003648-001 Vandalism Resistant Assembly, cover assembly with 1/8 in NPT air connection and push-in retainer to replace standard cover

Replacement Parts:

14003102-001 Replacement Top Assembly

14003297-001 Valve repack kit for VP526A, VP527A, VP531A. or V7527 with 3/16 inch stem

315917 Diaphragm

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP526A1001	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	3 psi to 10 psi	21 kPa to 69 kPa
VP526A1019	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	see graph	3 psi to 10 psi	21 kPa to 69 kPa
VP526A1027	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	2 psi to 5 psi	14 kPa to 34 kPa
VP526A1035	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	see graph	2 psi to 5 psi	14 kPa to 34 kPa
VP526A1043	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	8 psi to 11 psi	55 kPa to 76 kPa

Pneumatic Integral Valves

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP526A1050	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	45 deg. SAE flare	2.5 Cv	2.16 Kv	see graph	8 psi to 11 psi	55 kPa to 76 kPa
VP526A1068	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	see graph	3 psi to 10 psi	21 kPa to 69 kPa
VP526A1076	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	3 psi to 10 psi	21 kPa to 69 kPa
VP526A1084	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	see graph	2 psi to 5 psi	14 kPa to 34 kPa
VP526A1092	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	2 psi to 5 psi	14 kPa to 34 kPa
VP526A1100	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	see graph	8 psi to 11 psi	55 kPa to 76 kPa
VP526A1118	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	see graph	8 psi to 11 psi	55 kPa to 76 kPa

VP527 Pneumatic Water Valve



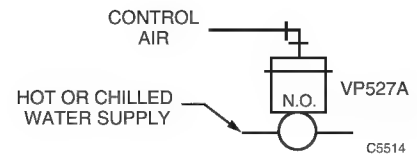
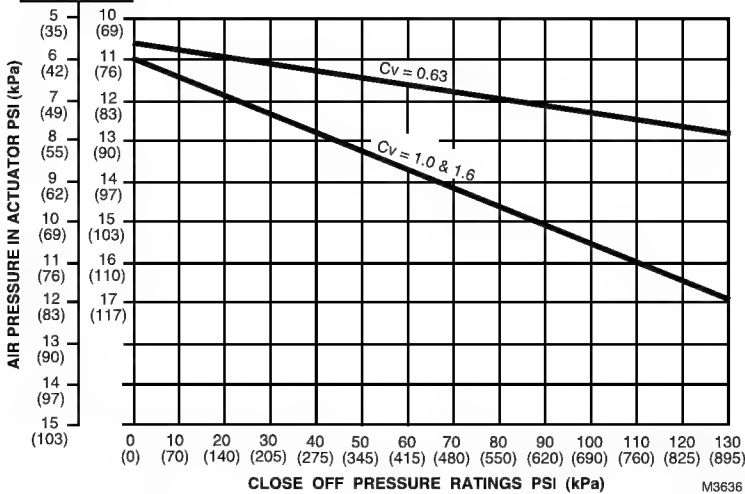
Normally open, single-seated, high pressure valve provides proportional control of hot and/or cold water in unit air conditioners and fan coil units.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Small size permits installation where space is limited.
- Forged brass, straight-through body with end connections threaded for 45 degrees SAE flare fitting nuts.
- Spring-loaded, self-adjusting, Buna-N "V"-ring packing is replaceable without shutting system down.
- High-temperature rolling diaphragm actuator (aluminum cover) and high-temperature plastic diaphragm retaining cup with integral air connection for 1/4 in. (6 mm) O.D. plastic tubing.
- Integral seat and brass plug with removable composition disc provides equal percentage flow.
- Stainless steel stem, 3/16 in. (5 mm) diameter.

SPRING RANGE

PSI (kPa)	
2-5 (14-35)	3-10 (21-69)



Valve Type: Unitary

Body Pattern: Two-way

Dimensions, Approximate: 4 1/8 in. high, 3 1/8 in. wide (105 mm high, 79 mm wide)

Body Pressure: 250 psi (1724 kPa)

Air Connections: Push on for 1/4 in. O.D. plastic tubing

Controlled Medium: Water

Humidity Range: 5 to 95% RH

Maximum Safe Actuator Diaphragm Temperature: (230 F (110 C)

Maximum Diaphragm Pressure: 30 psi (205 kPa)

Temperature Range: 35 F to 250 F (2 C to 121 C)

Accessories:

14003648-001 Vandalism Resistant Assembly, cover assembly with 1/8 in NPT air connection and push-in retainer to replace standard cover

Replacement Parts:

14003102-001 Replacement Top Assembly

14003297-001 Valve repack kit for VP526A, VP527A, VP531A. or V7527 with 3/16 inch stem

14003475-001 VP527 Rebuild Kit, 0.4 or 0.6 Cv

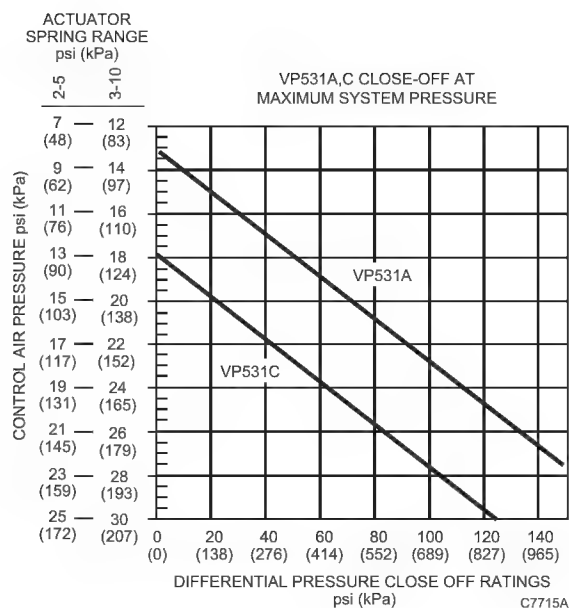
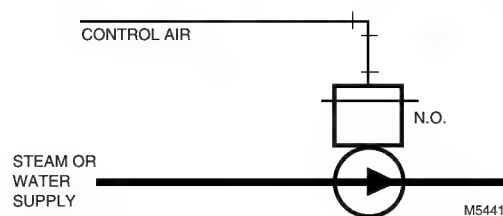
14003476-001 VP527A Rebuild Kit, 1.0 or 1.6 Cv

315917 Diaphragm

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range	
			Cv	Kv		(psi)	(kPa)
VP527A1018	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	0.63 Cv	0.54 Kv	130 psid at 13 psi	3 psi to 10 psi	21 kPa to 69 kPa
VP527A1026	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	130 psid at 17 psi	3 psi to 10 psi	21 kPa to 69 kPa
VP527A1034	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	130 psid at 17 psi	3 psi to 10 psi	21 kPa to 69 kPa
VP527A1059	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	0.63 Cv	0.54 Kv	130 psid at 8 psi	2 psi to 5 psi	14 kPa to 34 kPa
VP527A1067	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.0 Cv	0.86 Kv	130 psid at 12 psi	2 psi to 5 psi	14 kPa to 34 kPa
VP527A1075	O.D.: 1/2 in. (12.7 mm); Nominal: 3/8 in. (9.5 mm)	45 deg. SAE flare	1.6 Cv	1.38 Kv	130 psid at 12 psi	2 psi to 5 psi	14 kPa to 34 kPa

Pneumatic Integral Valves

VP531C Pneumatic Terminal Unit Valve



Normally-open, single-seated valve provides proportional control of steam or hot or cold water in terminal units.

Replacement devices are available for Johnson, Powers, Robertshaw, Barber-Colman, and older Honeywell devices.

- Available in several capacities and spring ranges for various application requirements.
- Easily replaceable actuator assembly for convenience of service.
- Compact size for use inside most unit enclosures.

Valve Type: Unitary

Body Pattern: Two-way, Straight Through

Dimensions, Approximate: Pipe centerline to top of actuator:

3 1/2 in. Face-to-face: 2 9/32 in.

(Pipe centerline to top of actuator: 89 mm; Face-to-face: 58 mm)

Body Pressure: 150 psi (1034 kPa)

Air Connections: Push on for 1/4 in. O.D. plastic tubing

Controlled Medium: Steam, Water

Humidity Range: 5 to 95% RH

Maximum Safe Actuator Diaphragm Temperature: 230 F (110 C)

Maximum Diaphragm Pressure: 30 psi (205 kPa)

Temperature Range: 40 F to 240 F (140 F max difference, alternating hot and cold water service) (4 C to 116 C (78 C max difference, alternating hot and cold water service))

Accessories:

14003648-001 Vandalism Resistant Assembly, cover assembly with 1/8 in NPT air connection and push-in retainer to replace standard cover

Replacement Parts:

14003102-001 Replacement Top Assembly

14003297-001 Valve repack kit for VP526A, VP527A, VP531A. or V7527 with 3/16 inch stem

14004898-001 Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. Valve 1.6 Cv

14004898-002 Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. & 3/4 in. Valve 2.6 Cv

14004898-003 Repair Top & Insert for VP531C or Upgrade for VP531A, 3/4 in. Valve 3.3 Cv

14002560-010 Repair stem assembly for 1.6 Cv VP531C or to Upgrade 1.6 Cv VP531A

14002560-011 Repair stem assembly for 2.3 Cv or 2.6 Cv VP531C or to Upgrade 2.3 Cv or 2.6 Cv VP531A

14002560-012 Repair stem assembly for 3.3 Cv VP531C or to Upgrade 3.3 Cv VP531A

14004898-001 Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. Valve 1.6 Cv.

14004898-002 Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. & 3/4 in. Valve 2.6 Cv.

14004898-003 Repair Top & Insert for VP531C or Upgrade for VP531A, 3/4 in. Valve 3.3 Cv

315913/0041 Range Spring, 3-10 psi (Orange) for VP525, VP526, VP527, VP531

316027/0042 Spring 2-5 psi, green

316026 Spring 8-11 psi, yellow

Pneumatic Integral Valves

Product Number	Size of End Connection	Type of End Connection	Capacity		Close-off Pressure Ratings at Pilot Pressure	Spring Range		Comments	Includes
			Cv	Kv		(psi)	(kPa)		
VP531C1000	1/2 in. (12.7 mm)	NPT- Straight	1.6 Cv	1.38 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1004 and VP531A1012	3-10 psi spring is packed in box
VP531C1018	3/4 in. (19.1 mm)	NPT- Straight	2.6 Cv	2.24 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1046 and VP531A1053	3-10 psi spring is packed in box
VP531C1026	3/4 in. (19.1 mm)	NPT- Straight	3.3 Cv	2.85 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1061 and VP531A1079	3-10 psi spring is packed in box
VP531C1034	O.D.: 5/8 in. (15.9 mm); Nominal: 1/2 in. (12.7 mm)	Solder-Straight	1.6 Cv	1.38 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1087 and VP531A1095	3-10 psi spring is packed in box
VP531C1042	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	Solder-Straight	2.6 Cv	2.24 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1103 and VP531A1111	3-10 psi spring is packed in box
VP531C1059	O.D.: 7/8 in. (22.2 mm); Nominal: 3/4 in. (19.1 mm)	Solder-Straight	3.3 Cv	2.85 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1129 and VP531A1137	3-10 psi spring is packed in box
VP531C1067	1/2 in. (12.7 mm)	NPT- Straight	2.3 Cv	1.99 Kv	70 psid at 20 psi	2 psi to 5 psi	14 kPa to 34 kPa	Replacement for VP531A1020 and VP531A1038	3-10 psi spring is packed in box

Pneumatic Valve Accessories

OS Number	Description	Used With
312817AA	Actuator Assembly, 3 to 8 psi, 21 to 55 kPa	—
312817T	Actuator assembly	—
312817U	Actuator Assembly, 3 to 7 psi, 21 to 48 kPa	—
312817V	Actuator Assembly, 8 to 12 psi, 55 to 83 kPa	—
312817Y	Actuator Assembly	VP522B1011, VP522B1029
316027/0042	Spring 2-5#, green	VP525; VP527
315800A	O-Ring, VP527, VP525, VP531	VP527, VP525, VP531

Pneumatic Valve Replacement Parts

OS Number	Description	Used With
314484	Brass Plug for 4.0 Cv VP517A Valves	VP517A
314485	Brass Plug for 6.3 Cv VP517A Valves	VP517A
314456	Brass Seat for 1/2 inch VP522A Valves	VP522A; VP517A
314462	Brass Seat for 1/2 inch VP522A Valves	VP522A; VP517A
314482	Stainless Steel Stem for 1/4 inch VP517A Valves	VP522A; VP517A
315911/0021	Cup for VP525, 526, 527, 531	VP525; VP527; VP531; VP526
304953	Washer	—
310135	Packing Spring, 2 Required	VP513
310143	Packing, 3 Required	VP513
310208	Packing	—
311111	Micro Bypass	—
311432	Packing 3/8 Inch	—
312826	Ring	—
313826	Ring	—
314526	Spring	—

Pneumatic Integral Valves

OS Number	Description	Used With
315917	Diaphragm	—
315937	VP513B	VP513B
315939	Spring	—
316026	Spring	—
316093	Stem	—
316207	Stem VP526	VP526
316208	Valve Seat	
316209	VP526A	VP526A
316322	Plug	
316336	Disc	
320047	Retaining Ring	
14000639-001	Washer	
14001046-004	Carr Fastener	
14001304-002	Plug	
14002560-002	Stem and Disk Assembly	
14002560-004	Stem and Disk Assembly	
14002560-007	Repair stem assembly for 1/2 inch, 2.0 Cv VP525C or to Upgrade 1/2 inch, 2.0 Cv VP525A	VP525A; VP525C
14002560-008	Repair stem assembly for 3/4 inch, 3.0 Cv VP525C or to Upgrade 3/4 inch, 3.0 Cv	VP525C
14002560-009	Repair stem assembly for 3/4 inch, 5.0 Cv VP525C or to Upgrade 3/4 inch, 5.0 Cv VP525A	VP525C
14002560-010	Repair stem assembly for 1/2 inch, 1.6 Cv VP531C or to Upgrade 1/2 inch, 1.6 Cv VP531A	VP531A; VP531C
14002560-011	Repair stem assembly for 1/2 inch, 2.3 Cv or 3/4 inch, 2.6 Cv VP531C or to Upgrade 1/2 inch, 2.3 Cv or 3/4 inch, 2.6 Cv VP531A	VP531A; VP531C
14002560-012	Repair stem assembly for 3/4 inch, 3.3 Cv VP531C or to Upgrade 3/4 inch, 3.3 Cv VP531A	VP531A; VP531C
14002560-013	Repair stem assembly for 1/2 inch, 0.63 Cv VP525C or to Upgrade 1/2 inch, 0.63 Cv VP525A	VP525A; VP525C
14002863-001	Valve Rebuild Kit for 3/4 to 1 1/4 in valves with CV of 6.3 or 10	

Pneumatic Accessories

OS Number	Description	Used With
14000716-001	Internal, Normally Closed, Motor Mounting Kit with Right Drive Ear, For MP909E and MP918.	RP920, MP909E,H
14001496-001	Mounting Plate for TP970 to 2" x 4" Electrical Box	
14001996-001	Dust Cover. TP970	
14002374-004	Restrictor Block Assembly, 0.005, For 2-Pipe TP970 Series Thermostats.	
14002560-006	Stem and Disk Holder Assembly. For 0.63 cv VP525 Valve	
14002913-001	.005 IN. Blue Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.; Order in Quantities of 10.	RP470
14002913-002	.007 in. Red Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 1/4 in.; Order in Quantities of 10.	LP907, RP7517
14002913-003	.007 in. Red Filter Restriction Assembly; Inlet: 1/4 in., Outlets: 1/4 in. and 5/32 in.	LP907
14002913-004	Pneumatic External Restrictor, 0.005", Blue, Inlet: 1/4", Outlets: 5/32" and 5/32"	
14002913-005	Pneumatic External Restrictor, 0.007", Blue, Inlet: 1/4", Outlets: 5/32" and 5/32"	
14002913-007	Restriction, with 2 O-Ring (14000365-111), 3 Conn-bottom[red] (14002918-002), 5 Cap-barb (14003567-001), Connector-top [Gray] 14002915-004)	
14002914-004	Filter assembly with Screen-filter (14001861-001), filter (14001862-001, Body-filter [(0137)-Gray], Screen-final (14001861-004)	
14003078-004	Pneumatic Switch with - base (14003079-002), housing (14003080-001), seal-roto [1-2-3] (14004851-001), Spring (14003085-004), Rotor[1-2-3] (14003086-001), washer (14003332-001), shaft (14003084-001), Ret-ring (14003089-001), Nut-round (802829-20), nut	14003192 AP407A
14003381-001	HH Brass Hex Bonnet, 1 3/8 diameter	
14003382-001	HH Brass Hex Bonnet 1 1/2 diameter	
14003428-001	Amber tint filter bowl 4 1/64 inch long x 2 59/64 inch diameter including Bushing (313003)	PP904A WP251A
14003519-001	0-30 psi Gauge Kit with Fittings for Copper or Poly Tubing	
14004203-001	Cartridge Kit	
14004205-002	PP901, PP902A & B Filter Station Assembly	PP901, PP902
14004559-001	Connector bag assembly, with connector assembly (14004558-001) and connector assembly (14004558-002)	LP909A Pneumatic Fittings
14004596-004	1 1/4 in. Bonnet for V5011/V5013	
14004788-910	Satin. Brass Cover Kit for TP970 Series, with Setpoint Slotted Cover, and Both Horizontal and Vertical Window Inserts for Temperature Display	
14004789-910	Bright Brass Cover Kit for TP970 Series, with Setpoint Slotted Cover, and Both Horizontal and Vertical Window Inserts for Temperature Display	
14004878-910	Premier White Cover Kit for TP970 Series, with Setpoint Slotted Cover, and Both Horizontal and Vertical Window Inserts for Temperature Display	
14004897-001	Repair Top & Insert for VP525C or Upgrade for VP525A, 1/2 in. NPT Valve 0.63 cv	VP525
14004897-002	Repair Top & Insert for VP525C or Upgrade for VP525A, 1/2 in. Valve 2.0 cv	VP525
14004897-003	Repair Top & Insert for VP525C or Upgrade for VP525A, 3/4 in. Valve 3.0 cv	VP525
14004897-004	Repair Top & Insert for VP525C or Upgrade for VP525A, 3/4 in. Valve 5.0 cv	VP525
14004898-001	Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. Valve 1.6 cv.	VP531
14004898-002	Repair Top & Insert for VP531C or Upgrade for VP531A, 1/2 in. & 3/4 in. Valve 2.6 cv.	VP531
14004898-003	Repair Top & Insert for VP531C or Upgrade for VP531A, 3/4 in. Valve 3.3 cv	VP531
14004904-001	2-1/2 in. dia. Pneumatic Receiver Gage (-40 to 160°F), +/- 2% accuracy. Replaces 14506495-001(Gage) + 14505846-001	
14004904-002	2-1/2 in. dia. Pneumatic Receiver Gage (0 to 200°F), +/- 2% accuracy. Replaces 4506495-001(Gage) + 14505846-002	
14004904-003	2-1/2 in. dia. Pneumatic Receiver Gage (40 to 240°F), +/- 2% accuracy, Replaces 14506495-001(Gage) + 14505846-003	
14004904-004	2-1/2 in. dia. Pneumatic Receiver Gage (3 to 15 psi), +/- 2% accuracy, Replaces 14506495-001(Gage) + 14505846-022	
14004904-005	2-1/2 in. dia. Pneumatic Receiver Gage (0 to 20 psi), +/- 2% accuracy, Replaces 14506495-001(Gage) + 14505846-023	

Pneumatic Accessories

OS Number	Description	Used With
14004904-006	2-1/2 in. dia. Pneumatic Receiver Gage (25 to 125×F), +/- 2% accuracy. Replaces 14506495-001(Gage) + 14505846-004	
14004904-007	2-1/2 in. dia. Pneumatic Receiver Gage (50 to 100×F), +/- 2% accuracy. Replaces 14506495-001(Gage) + 14505846-005	
14004904-009	2-1/2 in. dia. Pneumatic Receiver Gage (0 to 2 in. wc), +/- 2% accuracy	
14004904-010	2-1/2 in. dia. Pneumatic Receiver Gage (15 to 85% RH), +/- 2% accuracy	
14004904-011	2-1/2 in. dia. Pneumatic Receiver Gage (15 to 75% RH), +/- 2% accuracy	
14004904-012	2-1/2 in. dia. Pneumatic Receiver Gage (15 to 95% RH), +/- 2% accuracy	
14004904-101	2-1/2 in. dia. Pneumatic Receiver Gage (-40 to 160×F), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-001	
14004904-102	2-1/2 in. dia. Pneumatic Receiver Gage (0 to 200×F), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-002	
14004904-103	2-1/2 in. dia. Pneumatic Receiver Gage (40 to 240×F), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-003	
14004904-104	2-1/2 in. dia. Pneumatic Receiver Gage (3 to 15 psi), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-022	
14004904-105	2-1/2 in. dia. Pneumatic Receiver Gage (0 to 20 psi), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-023	
14004904-106	2-1/2 in. dia. Pneumatic Receiver Gage (25 to 125×F), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-004	
14004904-107	2-1/2 in. dia. Pneumatic Receiver Gage (50 to 100×F), +/- 1% accuracy. Replaces 14506495-101(Gage) + 14505846-005	
14004905-001	3-1/2 in. dia. Pneumatic Receiver Gage (-40 to 160×F), +/- 2% accuracy	
14004905-002	3-1/2 in. dia. Pneumatic Receiver Gage (0 to 200×F), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-102	
14004905-003	3-1/2 in. dia. Pneumatic Receiver Gage (40 to 240×F), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-102	
14004905-004	3-1/2 in. dia. Pneumatic Receiver Gage (3 to 15 psi), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-122	
14004905-005	3-1/2 in. dia. Pneumatic Receiver Gage (0 to 20 psi), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-123	
14004905-006	3-1/2 in. dia. Pneumatic Receiver Gage (25 to 125×F), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-104	
14004905-007	3-1/2 in. dia. Pneumatic Receiver Gage (50 to 100×F), +/- 2% accuracy. Replaces 14506496-001(Gage) + 14505846-105	
14004905-009	3-1/2 in. dia. Pneumatic Receiver Gage (0 to 2 in. wc), +/- 2% accuracy	
14004905-101	3-1/2 in. dia. Pneumatic Receiver Gage (-40 to 160×F), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-101	
14004905-102	3-1/2 in. dia. Pneumatic Receiver Gage (0 to 200×F), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-102	
14004905-103	3-1/2 in. dia. Pneumatic Receiver Gage (40 to 240×F), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-103	
14004905-104	3-1/2 in. dia. Pneumatic Receiver Gage (3 to 15 psi), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-122	
14004905-105	3-1/2 in. dia. Pneumatic Receiver Gage (0 to 20 psi), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-123	
14004905-106	3-1/2 in. dia. Pneumatic Receiver Gage (25 to 125×F), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-104	
14004905-107	3-1/2 in. dia. Pneumatic Receiver Gage (50 to 100×F), +/- 1% accuracy. Replaces 14506496-101(Gage) + 14505846-105	
14505159-001	Tamper Switch for Cabinet	
14505928-001	Lock & Key for Cabinet	
14506635-001	Rough-in Ring, for Half-sized (18 in. x 18 in.) Standard Cabinet (19" x 24" x 9").	
14506635-002	Rough-in Ring for Full-sized (36 in. x 36 in.) Standard Cabinet (38" x 24" x 9").	
14506636-001	Door with Lock for Half-sized (18 in. x 18 in.) Standard Cabinet.	
14506636-002	Door with Lock for Full-sized (36 in. x 36 in.) Standard Cabinet.	
14506747-001	Subpanel for Half-sized (18 in. x 18 in.) Standard Cabinet.	
14506747-002	Subpanel for Full-sized (36 in. x 36 in.) Standard Cabinet (38" x 24" x 9").	

Pneumatic Accessories

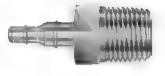



OS Number	Description	Used With
20133	Dial	
24799	5/64 in. Hex Wrench	
26025B	Damper crank arm for 3/8 in. axle. Elongated slot for linkage connection. Slot scaled for 40-50-60-75-90 degrees.	MP516, MP909D, MP909E, H
305616	Receiver Gage, 1 1/2 in. 1/8 NPT center back, Pressure 0 to 2 in WC	RP920
305617	1-1/2" dia. Pneumatic Stem-mounted Gage (1.0 to 3.0 in. wc), 1/8" NPT back connection, +/- 0.4 in. wc	
305620	1-1/2" dia. Pneumatic Stem-mounted Gage (4.0 to 6.0 in. wc), 1/8" NPT back connection, +/- 0.4 in. wc	
305914	Gauge, 2 in., 0-30 PSI	Pneumatic Systems
305917	Indication gauge for WP230, 240, 250 (0-160psi, 2', 1/4 NPT back connected	
305929	Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature -40 to 160F	RP920
305930	Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature 0 to 200F	RP920
305931	Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature 40 to 240F	
305965	Pressure Gage 0 to 30 psi, 1 1/2 in. 1/8 NPT center back	RP920
305972	Receiver Gage, 1 1/2 in. 1/8 NPT center back, temperature 50 to 100F	RP920
301572A/0767	Thermostat Key	Actuators
310418A	Pneumatic External Adjustable Restrictor	
312466/0605	Stem Extension for MP953	Air Supplies, MP953
314439	Duct Mounting Clip for Averaging capillary	LP920, LP915
315439/0062	Clevis	
315559E	Pneumatic "Tee" Restrictor	
315913/0041	Range Spring, 3-10 LB (Orange) for VP525, VP526, VP527, VP531	Filter cartridge kit for PP902C and PP902D., VP525; VP531, VP526
316134B	PP901A & B Diaphragm Repair Kit	
316203A	Pressure Regulator Valve Assembly, PP901A & PP901B, PP902A,B.	
802550	Toggle Switch	
804191B	3 in. dia. Pneumatic Panel-mounted Gage (0 to 30 psi), 1/4" Barbed back connection, +/-2x F accuracy	

OS Number	Description	Used With	
AK3500-2	Voltage to Digital Converter 208 to 240 Vac input		
ARRBK1611	Arrow PRV		
AK3485D	Installation Material	Flame retardant polyethylene tubing	
AK3485E	Installation Material		
AK3485F	Installation Material		
AK3980	Fittings		
AK3052W1C	Pneumatic Tubing, Polyethylene Flame Retardant Plastic (5/32" O.D. x 0.030" wall thickness), Carton qty = 3000 ft		
AK3053W1C	Pneumatic Tubing, Polyethylene Flame Retardant Plastic (1/4" O.D. x 0.040" wall thickness), Black with Colored Markings, without Fittings, Carton qty = 1500 ft		
AK3056C	Pneumatic Tubing, Polyethylene Flame Retardant Plastic (3/8" O.D. x 0.062" wall thickness), Black with 1 through 2 White Markings, without Fittings, Carton qty = 1000 ft		
AK3061C	Pneumatic Tubing, Polyethylene Flame Retardant Plastic (1/2" O.D. x 0.062" wall thickness), Black with 1 through 2 White Markings, without Fittings, Carton qty = 500 ft		
AK3240C	Polyethylene Pneumatic Twin Tubing, includes two 5/32" O.D. x 0.030" Wall Thickness Tubings, Black with Joining Web without Fittings, Carton qty = 1000 ft		
AK3241C	Polyethylene Pneumatic Twin Tubing, includes two 1/4" O.D. x 0.040" Wall Thickness Tubings, Flame Retardant, Black with Joining Web without Fittings, Carton qty = 5000 ft		

Pneumatic Accessories

OS Number	Description	Used With	
AK3470B	Condensate Trap, 1/2", for 1 hp. or larger compressors	Air Supplies	
AK3470C	Condensate Trap, 3/8", for 3/4 hp. or smaller compressors		
AK3486	Coalescing In-line Pneumatic Filter Kit includes Two Filters with integral barbed fitting for individual devices	Air Supplies	
AK3863	Honeywell Thermostat Tool Kit, TP970/TP900	HP970, HP972, TP970	
AK3970	Cover for Aspirator Boxes 14002424-002 and 14002424-003	TP9600	
ARR262	Miniature Pressure Regulator (0-125 psi Range), no gage	Air Supplies	
ARR262I	Miniature Pressure Regulator (0-20 psi Range), no gage		
ARR262-S31	Miniature Pressure Regulator (0-125 psi Range), includes 0-160 psi gage		
ARR262-S32	Miniature Pressure Regulator (0-60 psi Range), includes 0-60 psi gage		
CCT1421	1/4" Brass Compression Union	Air Supplies	
CCT1435T	Pneumatic Fitting - 1/4" x 1/8" MPT Brass Compression Adapter to MPT, Must Purchase in Multiples of 10		
CCT1529	Pneumatic Fitting - 1/4" Brass Compression Tee, Must Purchase in Multiples of 10		
CCT1531	Pneumatic Fitting - 3/8" Brass Compression Tee, Must Purchase in Multiples of 10		
CCT1532	Pneumatic Fitting - 1/2" Brass Compression Tee, Must Purchase in Multiples of 10		
CCT1571	Pneumatic Fitting - 1/4" Plastic Ferrule (white) for use with plastic tubing and standard compression fittings, Must Purchase in Multiples of 10		
CCT1572	Pneumatic Fitting - 3/8" Plastic Ferrule (white) for use with plastic tubing and standard compression fittings, Must Purchase in Multiples of 10		
CCT1573	Pneumatic Fitting - 1/2" Plastic Ferrule (white) for use with plastic tubing and standard compression fittings, Must Purchase in Multiples of 10		

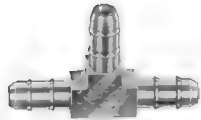


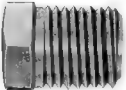



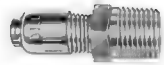
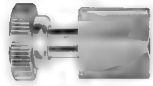

Pneumatic Accessories

OS Number	Description	Used With	
CCT1575	Pneumatic Fitting - 1/4" Brass Insert for Plastic Tubing, Must Purchase in Multiples of 10		
CCT1576	Pneumatic Fitting - 3/8" Brass Insert for Plastic Tubing, Must Purchase in Multiples of 10		
CCT1577	Pneumatic Fitting - 1/2" Brass Insert for Plastic Tubing, Must Purchase in Multiples of 10		
CCT1589B	Pneumatic Fitting - 1/4"x1/8" FPT 90° Barbed Female Street Ells, Must Purchase in Multiples of 10		
CCT1590BT	Pneumatic Fitting - 1/4" Barbed x 1/8" MPT Male Adapter, Taped, Must Purchase in Multiples of 10		
CCT1594B	Pneumatic Fitting - 1/4" Barbed x 1/8" FPT Female Adapter, Must Purchase in Multiples of 10		
CCT1595BT	Pneumatic Fitting - 1/4" barbed x 1/8" MPT 90° Barbed Male Street Ells, Must Purchase in Multiples of 10		
CCT1598B	Pneumatic Fitting - 3/8" barbed x 3/8" barbed 90° Elbow		
CCT1599BT	Pneumatic Fitting - combination 5/32" and 1/4" Barbed x 1/8" MPT Male Adapter, Must Purchase in Multiples of 10		
CCT1602	Pneumatic Fitting - In-line Gage Tee (5/32" barbed x 5/32" barbed x 1/8" FPT), Must Purchase in Multiples of 10		
CCT1606B	Pneumatic Fitting - 5/32" barbed x 1/4" barbed (brass) plastic tubing coupling, reducing, Must Purchase in Multiples of 10		
CCT1607B	Pneumatic Fitting - 1/4" barbed x 1/4" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1608B	Pneumatic Fitting - 3/8" barbed x 3/8" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1610B	Pneumatic Fitting - 3/8" barbed x 1/4" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1611B	Pneumatic Fitting - 1/2" barbed x 3/8" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1612B	Pneumatic Fitting - 1/4" barbed x 1/4" barbed x 1/4" barbed (brass) Straight Tee, Must Purchase in Multiples of 10		
CCT1613B	Pneumatic Fitting - 3/8" barbed x 3/8" barbed x 3/8" barbed (brass) Straight Tee, Must Purchase in Multiples of 10		

Pneumatic Accessories

OS Number	Description	Used With	
CCT1614B	Pneumatic Fitting - 1/4" barbed x 1/4" barbed x 1/8" FPT In-line Gage Tee, Must Purchase in Multiples of 10		
CCT1615B	Pneumatic Fitting - 3/8" barbed x 3/8" barbed x 1/4" barbed Reducing Tee, Must Purchase in Multiples of 10		
CCT1616B	Pneumatic Fitting - 1/2" barbed x 1/2" barbed x 1/4" barbed Reducing Tee, Must Purchase in Multiples of 10		
CCT1617B	Pneumatic Fitting - 1/2" barbed x 1/2" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1618B	Pneumatic Fitting - 1/2" barbed x 1/2" barbed x 3/8" barbed Reducing Tee, Must Purchase in Multiples of 10		
CCT1619B	Pneumatic Fitting - Bulkhead Barb, 1/4" barbed x 1/4" Compression Nuts (for panels 5/16" thick), Must Purchase in Multiples of 10		
CCT1620B	Pneumatic Fitting - 1/2" barbed x 1/2" barbed x 1/2" barbed (brass) Straight Tee, Must Purchase in Multiples of 10		
CCT1622	Pneumatic Fitting - 1/4" barbed x 1/4" barbed x 1/8" FPT In-line Gage Tee with mounting tabs, Must Purchase in Multiples of 10		
CCT1623	Pneumatic Fitting - 1/4" Spring Clamp for Pneumatic Tubing, Must Purchase in Multiples of 10		
CCT1625	Pneumatic Fitting - 1/2" Spring Clamp for Pneumatic Tubing		
CCT1628B	Pneumatic Fitting - 5/32" barbed x 5/32" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1629B	Pneumatic Fitting - 1/2" barbed x 1/4" barbed (brass) plastic tubing coupling, Must Purchase in Multiples of 10		
CCT1630B	Pneumatic Fitting - 1/4" barbed x 1/4" barbed x 5/32" barbed Reducing Tee, Must Purchase in Multiples of 10		
CCT1631B	Pneumatic Fitting - 3/8" barbed x 3/8" barbed x 5/32" barbed Reducing Tee, Must Purchase in Multiples of 10		
CCT1633BT	Pneumatic Fitting - 1/4" Barbed x 1/4" MPT Male Adapter, Must Purchase in Multiples of 10		
CCT1635B	Pneumatic Fitting - 1/4" barbed x 1/4" Compression Adaptor, Must Purchase in Multiples of 10		

Pneumatic Accessories

OS Number	Description	Used With	
CCT1637B	Pneumatic Fitting - 5/32" barbed x 5/32" barbed x 5/32" barbed (brass) Straight Tee, Must Purchase in Multiples of 10		
CCT1640	Pneumatic Fitting - 1/4" Tubing Plug, Must Purchase in Multiples of 10		
CCT1641	Pneumatic Fitting - 5/32" barbed x 5/32" Brass barbed 90 degree Elbow, Must Purchase in Multiples of 10		
CCT1642	Pneumatic Fitting - 1/4" barbed x 1/4" barbed 90 degree Elbow, Must Purchase in Multiples of 10		
CCT1643	Pneumatic Fitting - 1/4" barbed x 5/32" barbed 90 degree Elbow		
CCT1692T	Pneumatic Fitting - 1/4" MPT x 1/8" FPT (brass) Pipe Bushing Taped, Must Purchase in Multiples of 10		
CCT1694T	Pneumatic Fitting - 3/8" MPT x 1/4" FPT Brass Reducing Pipe Bushing, Taped, Must Purchase in Multiples of 10		
CCT1696T	Pneumatic Fitting - 1/2" MPT x 1/4" FPT Brass Reducing Pipe Bushing, Taped, Must Purchase in Multiples of 10		
CCT1801	Pneumatic Fitting - Rubber Cap for 1/4" O.D. Pneumatic Tubing, Must Purchase in Multiples of 10		
CCT1802	Pneumatic Fitting - Rubber Grommet for 1/4" hole used to install capillary in duct		
CCT1807A	Plastic Cap for 3/8 in. Tubing. Must purchase in multiples of 10.		
CCT1815	Pneumatic Fitting - Aluminum Barb Plug for 5/32" x 5/32" O.D. Pneumatic Tubing (no air passage), Must Purchase in Multiples of 10		
CCT1820	Plastic Bushing for 1/2 in. EMP or K.O., Must purchase in multiples of 10.		
CCT2083T	Pneumatic Fitting - Tank Valve with CCT2084 Cap, 1/8 in. MPT, Must Purchase in Multiples of 10		
CCT2085	Pneumatic Fitting - Gauge Adapter fits any standard 1/8 in. NPT gage, Must Purchase in Multiples of 10	LP907	
CCT2090A	Air Check Diode Valve 1/4" O.D. Brass, 1.2 SCFM.		



Pneumatic Accessories

OS Number	Description	Used With	
CCT2091	Pneumatic Fitting - Air Check Diode Valve FPT for 1/4" O.D. Pneumatic Tubing (4.4 scfm)		
CCT2092	Pneumatic Fitting - Air Check Diode Valve FPT for 3/8" O.D. Pneumatic Tubing (7.5 scfm)		
CCT2093	Pneumatic Fitting - Air Check Diode Valve FPT for 1/2" O.D. Pneumatic Tubing (12.7 scfm)		
CCT2127B	Pneumatic Fittings - 1/4" barbed x 1/4" barbed Pneumatic Needle Valve, Must Purchase in Multiples of 10		
CCT2564	Pneumatic Fittings - Plated Single Straps for 1/4" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2565	Pneumatic Fittings - Plated Single Straps for 3/8" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2566	Pneumatic Fittings - Plated Single Straps for 1/2" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2626	Pneumatic Fittings - Copper Gang Straps (6" wide) for 1/4" or 3/8" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2627	Pneumatic Fittings - Copper Gang Straps (36" wide) for 1/4" or 3/8" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2628	Pneumatic Fittings - Zinc-plated Steel Universal Gang Straps (24" wide) for 1/8" through 3/4" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2630	Pneumatic Fittings - Aluminum Universal Gang Straps (24" wide) for 1/8" through 3/4" O.D. Copper Tubing, Must Purchase in Multiples of 10		
CCT2760	Pneumatic Fittings - Adhesive Straps (1" wide) for 1/4" O.D. Tubing, Must Purchase in Multiples of 10		
CCT2762	Pneumatic Fittings - Adhesive Straps (1" wide) for 3/8" O.D. Tubing, Must Purchase in Multiples of 10		
CCT3833	Valve Seat Removal Wrench for 1/2 in. VP526 Valves	VP526	
CCT3843	Valve Seat Removal Wrench for 5/8 in. and 7/8 in. Valves (VP513, VP517 & VP526)	VP526	
CCT720B	Tubing Bender for 1/4" O.D. Pneumatic Tubing		
CCT722B	Tubing Bender for 3/8" O.D. Pneumatic Tubing		
CCT729A	Gage Adapter for Calibration. Add 305965 0 to 30 psi Gage for Complete Tool.	HP970, HP972	
CCT735A	Thermostat Calibration Tool includes Allen wrench for cover installation.	HP970, HP972	
			

Pneumatic Accessories

OS Number	Description	Used With	
CCT811	quick-connect Pressure Test Kit		
CCT813	Slide Rule for Calculating Pneumatic Controller Settings for all RP908 and RP920's.		
CCT814	Slide Rule for Calculating Pneumatic Valve and Main Air Sizing		
CCT817C	Replacement Gage for the DSP3356 Pneumatic Control Calibration Kit		
CCT819	Proportional Band and Authority Setting Adjustment Tool for all RP920's		
CCT852	Pressure Bulb Assembly		
CCT853	Pneumatic Tubing for Test Equipment, 11/32" O.D. x 5/32" Latex Tubing (10 ft lengths)		
CCT950	Plastic Tube Holder, Must Purchase in Multiples of 10.		
CCT951	Plastic Tube Fitting Push, Must Purchase in Multiples of 10.		
CCT970	Thermometer Calibration Tool for Pneumatic Thermostats (TP970-family)		
DSP3356	Calibration Training Kit		
HKN03708008	Separator Drain. Assembly with 16 oz. Metal Bowl (for HKN8015)		
HKN03708304	Separator Drain. Assembly with 16 oz. Metal Bowl (for HKN8005, HKN8010, & HKN8210)		
HKN07132	Filter Cartridge for HKN13023 Oil Removal Filter		
HKN07313	Replacement Filter Cartridge for 310 - Hankison International Part No.0731-3		
HKN07341	Filter Sleeve Kit (for HKN8005, HKN8010 & HKN8210)		

Pneumatic Accessories

OS Number	Description	Used With	
HKN07444101	Separator/Drain. Cartridge (for HKN8005, HKN8010 & HKN8210)		
HKN07444201	Separator/Drain. Cartridge (for HKN8015, HKN8025 & HKN8035)		
HKN17012	Bypass Valve Kit, 15 scfm		
HKN44604363	Filter Element, 40 microns with gaskets (for HKN8010, HKN8210, HKN8015, HKN8025 & HKN8210)		
HKN44604364	Filter Element, 40 microns with gaskets (for HKN8045, HKN8055, HKN8070 & HKN80100)		
HKN61052391	Fan Motor (for HKN8010, HKN8210, HKN8015, HKN8025 & HKN8035, 115VAC/1phase/60Hertz Models only)		
MJK100	Pneumatic Fittings Kit - Includes an assortment of fittings most often required for replacement or repair of pneumatic devices.		
MQP800	Pneumatic Calibration Kit with two 0-30 psi gauges		

Definitions and Abbreviations

Actuator (Damper)—A mechanical device that operates a final control element (e.g., valve, damper). **Actuator (Valve)**—The part of an automatic control valve that moves the stem up and down based on an electric, electronic, or pneumatic signal from a controller. For butterfly or other rotary valves, the actuator rotates the stem. The actuator and valve can be two separate devices or together they can be one device.

BLP—See Branchline pressure.

Body rating (actual)—The correlation between safe, permissible flowing fluid pressure and flowing fluid temperature of the valve body (exclusive of the packing, disc, etc.). The nominal valve body rating is the permissible pressure at a specific temperature.

EXAMPLE:

A cast iron, screwed-end valve has a 125 psi nominal body rating. The actual valve body ratings may be 125 psi at 380 F and 175 psi at 175 F.

Body rating (nominal)—The theoretical pressure rating, expressed in psi, of the valve body exclusive of packing, disc, etc. The nominal rating is often cast on the valve body and provides a way to classify the valve by pressure. A valve of specified body material and nominal body rating often has characteristics such as pressure-temperature ratings, wall thickness, and end connections which are determined by a society such as ANSI (American National Standards Institute). Figure 2 shows typical ANSI pressure-temperature ratings for valves. Note that the nominal body rating is not the same as the actual body rating.

Body—The valve casting through which the controlled fluid flows.

Bonnet—The part that screws to the top of the valve body and contains the packing that seals and guides the valve stem.

Branch line—The air line from a controller to the controlled device.

Branchline pressure (BLP)—A varying air pressure signal from a controller to an actuator, carried by the branch line. Can go from zero to full main line pressure.

British thermal unit (Btu)—The amount of heat required to raise one pound of water one degree Fahrenheit.

Btu—See British thermal unit.

Close-off rating of three-way valves—The maximum pressure difference between either of the two inlet ports and the outlet port for mixing valves, or the pressure difference between the inlet port and either of the two outlet ports for diverting valves.

Close-off rating—The maximum pressure drop that a valve can withstand without leakage while in the full closed position. The close-off rating is a function of actuator power to hold the valve closed against pressure drop, but structural parts such as the stem can be the limiting factor.

EXAMPLE:

A valve with a close-off rating of 10 psi could have 40 psi upstream pressure and 30 psi downstream pressure. Note that in applications where failure of the valve to close is hazardous, the maximum upstream pressure must not exceed the valve close-off rating, regardless of the downstream pressure.

The valve close-off rating is independent of the actual valve body rating. See definition of BODY RATING (ACTUAL) in this section.

Control point—The actual value of the controlled variable (setpoint plus or minus offset).

Control valve—A device used to control the flow of fluids such as steam, water, or air.

Controlled variable—The quantity or condition that is measured and controlled (e.g., temperature, relative humidity, pressure).

Controller—A device that senses the controlled variable (or receives an input signal from a remote sensing element), compares the signal with the setpoint, and outputs a control signal (branchline pressure) to an actuator.

Cv—See Flow coefficient.

DA—See Direct acting or Discharge air.

Damper—A device used to control the flow of air in a duct or through a wall louver.

Dew-point temperature—The temperature at which water vapor from the air begins to form droplets and settles or condenses on surfaces that are colder than the air. The more moisture the air contains, the higher its dew point temperature. When dry-bulb and wet-bulb temperatures of the air are known, the dew-point temperature can be plotted on the psychrometric chart.

Differential—A term that applies to two-position devices. The range through which the controlled variable must pass in order to move the final control element from one to the other of its two possible positions. The difference between cut-in and cut-out temperatures, pressures, etc.

Direct acting (DA)—A direct-acting thermostat or controller increases the branchline pressure on an increase in the measured variable and decreases the branchline pressure on a decrease in the variable. A direct-acting actuator extends on an increase in branchline pressure and retracts on a decrease in pressure.

Direction of flow—The correct flow of the controlled fluid through the valve is usually indicated on the valve body. If the flow of the fluid goes against the indicated direction, the disc can slam into the seat as it approaches the closed position. The result is excessive valve wear, hammering, and oscillations. In addition, the actuator must work harder to reopen the closed valve since it must overcome the pressure exerted by the fluid on top of the disc rather than have the fluid assist in opening the valve by exerting pressure under the disc.

Discharge air (DA)—Conditioned air that has passed through a coil. Also, air discharged from a supply duct outlet into a space.

Disc—The part of the plug assembly that contacts the valve seat to close off flow of the controlled fluid. Certain valve plug assemblies are built so the part of the assembly contacting the seat is replaceable. This type of plug is called a renewable disc plug assembly. Renewable discs are usually made of a composition material softer than metal. Valves with all metal or nonrenewable discs may have to be "ground in" to restore a damaged seating surface. Note that the term disc can mean both the plug and disc together.

Dry-bulb temperature—The temperature read directly on an ordinary thermometer as degrees Fahrenheit (F) or degrees Celsius (C).

Equal percentage—A valve which changes the existing flow an equal percentage (regardless of flow rate) for similar movements in stem travel (at any point in the flow range).

Final control element—A device such as a valve or damper that acts to change the value of the manipulated variable. Positioned by an actuator.

Flow coefficient (capacity index)—Used to state the flow capacity of a control valve for specified conditions. Currently, in this catalog, two flow coefficients K_v or C_v are used. The flow coefficients have the following relationships:

$$A_v = 0.0000240 C_v$$

$$K_v = 0.865 C_v$$

The flow coefficient K_v is water flow in cubic meters per hour with a static pressure loss across the valve of 10^5 pascals (1 bar) within the temperature range of 5 to 40 C and can be determined from the formula:

$$K_v = Q \sqrt{\frac{\Delta p_{K_v}}{\Delta p} \cdot \frac{\rho}{\rho_w}} \quad M2807$$

Where:

Q = volumetric flow in cubic meters per hour.

ρ = fluid density in kilograms per cubic meter.

ρ_w = density of water in kilograms per cubic meter.

Δp_{K_v} = static pressure loss of 10^5 pascals.

Δp = static pressure loss across the valve in pascals.

Pneumatic Definitions and Abbreviations

The flow coefficient C_v is water flow in gallons per minute with a pressure loss across the valve of one pound per square inch within the temperature range of 40 to 100 F and can be determined for other conditions from the formula:

$$C_v = Q \sqrt{\frac{1}{\Delta P} \cdot \frac{\rho}{\rho_w}} \quad M2810$$

Where:

Q = volumetric flow in US gallons per minute.

ρ = fluid density in pounds per cubic foot.

ρ_w = density of water in pounds per cubic foot within the temperature range of 40 to 100 F.

ΔP = static pressure loss across the valve in pounds per square inch.

K—Kelvin used in Standard International Units (SI) to express a temperature range.

Kv—See Flow coefficient.

Linear—A valve which provides a flow-to-lift relationship that is directly proportional. It provides equal flow changes for equal lift changes, regardless of percentage of valve opening. When plotted on rectilinear coordinates, the relationship approximates a straight diagonal line.

Linkage—A device which connects an actuator to a damper or control valve. To open and close a damper, the typical linkage consists of an actuator crankarm, balljoints, pushrod, and damper crank arm. In a valve application, the linkage connects the actuator to the valve and translates the rotary output of the actuator to the linear action of the valve stem.

M—See Main line.

MA—See Mixed air.

Main line (M)—The air line from the air supply system to controllers and other devices. Usually plastic or copper tubing.

Maximum pressure and temperature—The maximum pressure and temperature limitations of fluid flow that a valve can withstand. These ratings may be due to valve packing, body, or disc material or actuator limitations. The actual valve body ratings are exclusively for the valve body and the maximum pressure and temperature ratings are for the complete valve (body and trim). Note that the maximum pressure and temperature ratings may be less than the actual valve body ratings.

EXAMPLE:

The body of a valve, exclusive of packing, disc, etc., has a pressure and temperature rating of 125 psi at 380 F. If the valve contains a composition disc that can withstand a temperature of only 115 C, then the temperature limit of the disc becomes the maximum temperature rating for the valve.

Measuring element—Same as sensing element.

Mixed air (MA)—Typically a mixture of outdoor air and return air from the space.

mL/s—milliliters per second.

Modulating—Varying or adjusting by small increments. Also called "proportioning".

Offset—A sustained deviation between the actual system control point and its controller setpoint under stable operating conditions. Usually applies to proportional (modulating) control.

Plug—The part that varies the opening for the fluid to flow through the valve body. The following describes the three most common types of plugs:

- A contoured plug has a shaped end that is usually end-guided at the top or bottom (or both) of the valve body. The shaped end controls fluid flow through the valve.
- A quick-opening plug is flat and is either end-guided or guided by wings riding in the valve seat ring. The flat plug provides maximum flow soon after it lifts from the valve seat.

— A V-port plug has a cylinder, called a skirt, that rides up and down in the valve seat ring. The skirt guides the plug and varies the flow area via its shaped openings.

Port—The opening in the valve seat.

Pressure drop (critical)—The flow of a gaseous controlled fluid through the valve increases as the pressure drop increases until reaching a critical point. This point is the critical pressure drop, denoted $\Delta P_{\text{Critical}}$.

$\Delta P_{\text{Critical}} = 50\% \times P_1$ (Absolute upstream pressure)

When critical pressure is reached, any increase in pressure is dissipated in noise and cavitation rather than increase in flow. The noise and cavitation can destroy valve and adjacent piping components.

Pressure drop—The difference in upstream and downstream pressures of the fluid flowing through the valve. Pressure drop is denoted ΔP .

Proportional band—As applied to pneumatic control systems, the change in the controlled variable required to change the controller output pressure from 3 to 13 psi. Usually expressed as a percentage of sensor span.

Quick-opening—A valve which provides maximum possible flow as soon as the stem starts to lift the disc from the valve seat.

RA—See Reverse acting and Return air.

Relative humidity—The ratio of the measured amount of moisture in the air to the maximum amount of moisture the air can hold at the same temperature and pressure. Relative humidity is expressed in percent of saturation. Air with a relative humidity of 35, for example, is holding 35 percent of the moisture that it is capable of holding at that temperature and pressure.

Restrictor—A device in an air line that limits the flow of air.

Return air (RA)—Air from the conditioned space which is passed through the air handling unit and returned to the conditioned space.

Reverse acting (RA)—A reverse-acting thermostat or controller decreases the branchline pressure on an increase in the measured variable and increases the branchline pressure on a decrease in the variable. A reverse-acting valve actuator retracts on an increase in branchline pressure and extends on a decrease in pressure.

scfm—standard cubic feet per minute.

Seat—The stationary part of the valve body that has a raised lip to contact the valve disc when closing off flow of the controlled fluid.

Sensing element—A device that detects and measures the controlled variable (e.g., temperature, humidity).

Setpoint—The value on the controller scale at which the controller is set (e.g., the desired room temperature set on a thermostat). The desired control point.

Sling psychrometer—A device commonly used to measure the wet-bulb temperature. It consists of two identical thermometers mounted on a common base. The base is pivoted on a handle so it can be whirled through the air. One thermometer measures dry-bulb temperature. The bulb of the other thermometer is encased in a water-soaked wick. This thermometer measures wet-bulb temperature. Some models provide slide rule construction which allows converting the dry-bulb and wet-bulb readings to relative humidity.

Although commonly used, sling psychrometers can cause inaccurate readings, especially at low relative humidities, because of factors such as inadequate air flow past the wet-bulb wick, too much wick wetting from a continuous water feed, thermometer calibration error, and human error. To take more accurate readings, especially in low relative humidity conditions, motorized psychrometers are recommended.

Stem—The shaft that runs through the valve bonnet and connects an actuator to the valve plug.

Thermostat—A device that responds to changes in temperature and outputs a control signal (branchline pressure). Usually mounted on a wall in the controlled space.

Pneumatic Definitions and Abbreviations

Throttling range—Same as proportional band, except expressed in values of the controlled variable (e.g., degrees, percent relative humidity, pounds per square inch) rather than in percent.

Tight shut-off/close-off—A valve condition in which virtually no leakage of the controlled fluid occurs in the closed position. Generally, only single-seated valves provide tight shut-off. Double-seated valves typically have a one to three percent leakage in the closed position.

Trim—All parts of the valve that contact the controlled fluid. Trim includes the stem, packing, plug, disc, and seat; it does *not* include the valve body.

Wet-bulb temperature—The temperature read on a thermometer with the mercury bulb encased in a wet wick (stocking or sock) and with an air flow of 900 feet per minute across the wick. Water evaporation causes the temperature reading to be lower than the ambient dry-bulb temperature by an amount proportional to the moisture content of the air. The temperature reduction is sometimes called the evaporative effect. When the reading stops falling, the value read is the wet-bulb temperature.

The wet-bulb and dry-bulb temperatures are the easiest air properties to measure. When they are known, they can be used to determine other air properties on a psychrometric chart.

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Flame Safeguard Systems

Product Selection Matrix for CE Sequence Primary/Programmer Relay Modules:

For 230 Vac nominal applications—

Fuel	Burner Type	Relay Module Type
Single	Atmospheric	EC7810
Single	Atmospheric with fan	EC7820
Combination or single	On/Off Controlled Power Burner	EC7830
Combination or single	Full Modulation Power Burner	EC7850

For 120 Vac nominal applications—

Fuel	Burner Type	Relay Module Type
Combination or single	On/Off Controlled Power Burner	RM7830
Combination or single	Full Modulation Power Burner	RM7850

Use the following pages to select the following *required* devices:

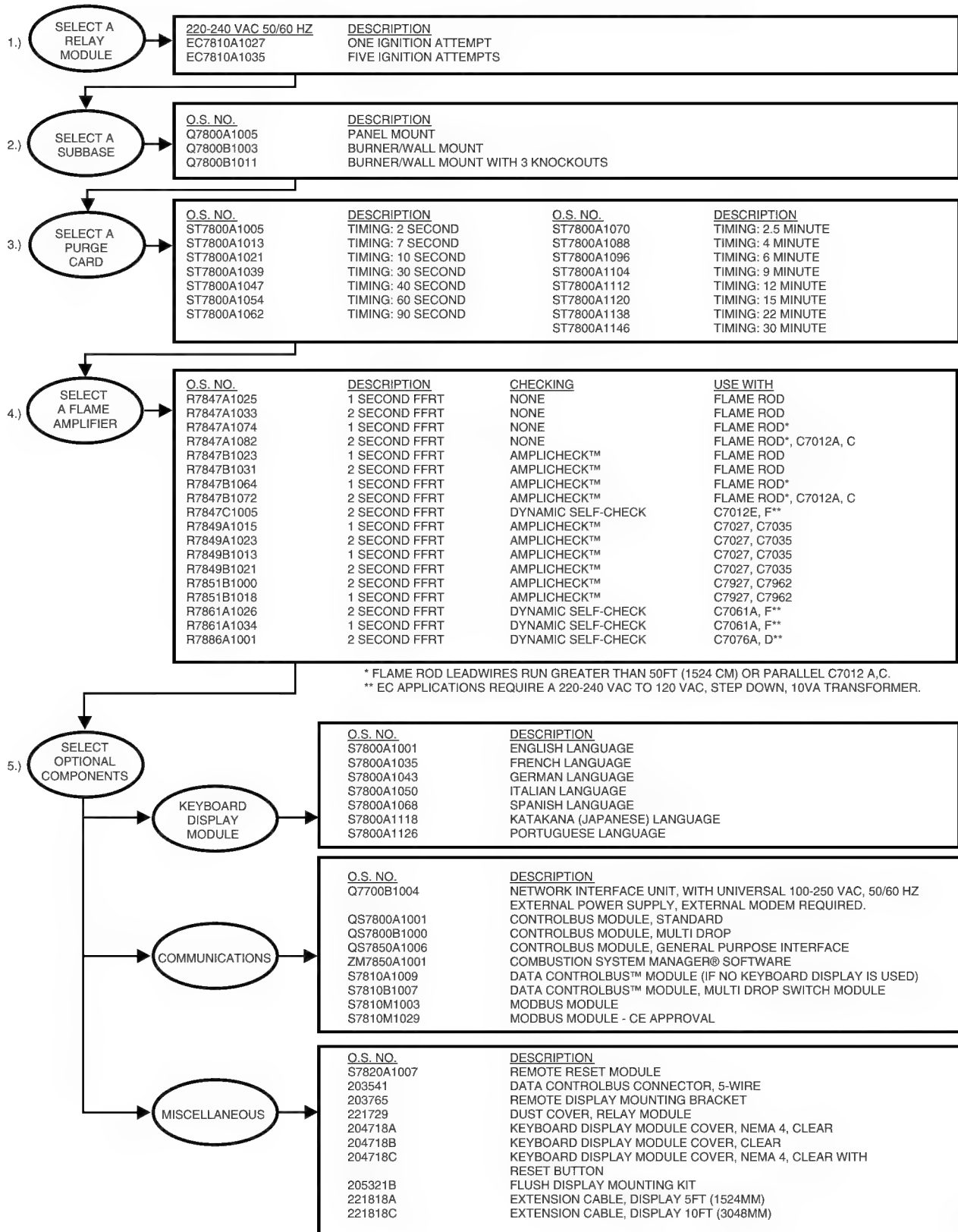
- Relay Module, 1 per burner
- Subbase, 1 per relay module
- Purge Timer Card, 1 per relay module
- Flame Amplifier, 1 per relay module

Some products are available only through Authorized Flame Safeguard
Wholesalers and/or Distributors.

Use the following pages to select the following *optional* devices:

- Keyboard Display module, up to 1 mounted to relay module, remote as desired
- Communications, network and ControlBus™ modules to service selected relays
- Miscellaneous, as required to complete installation

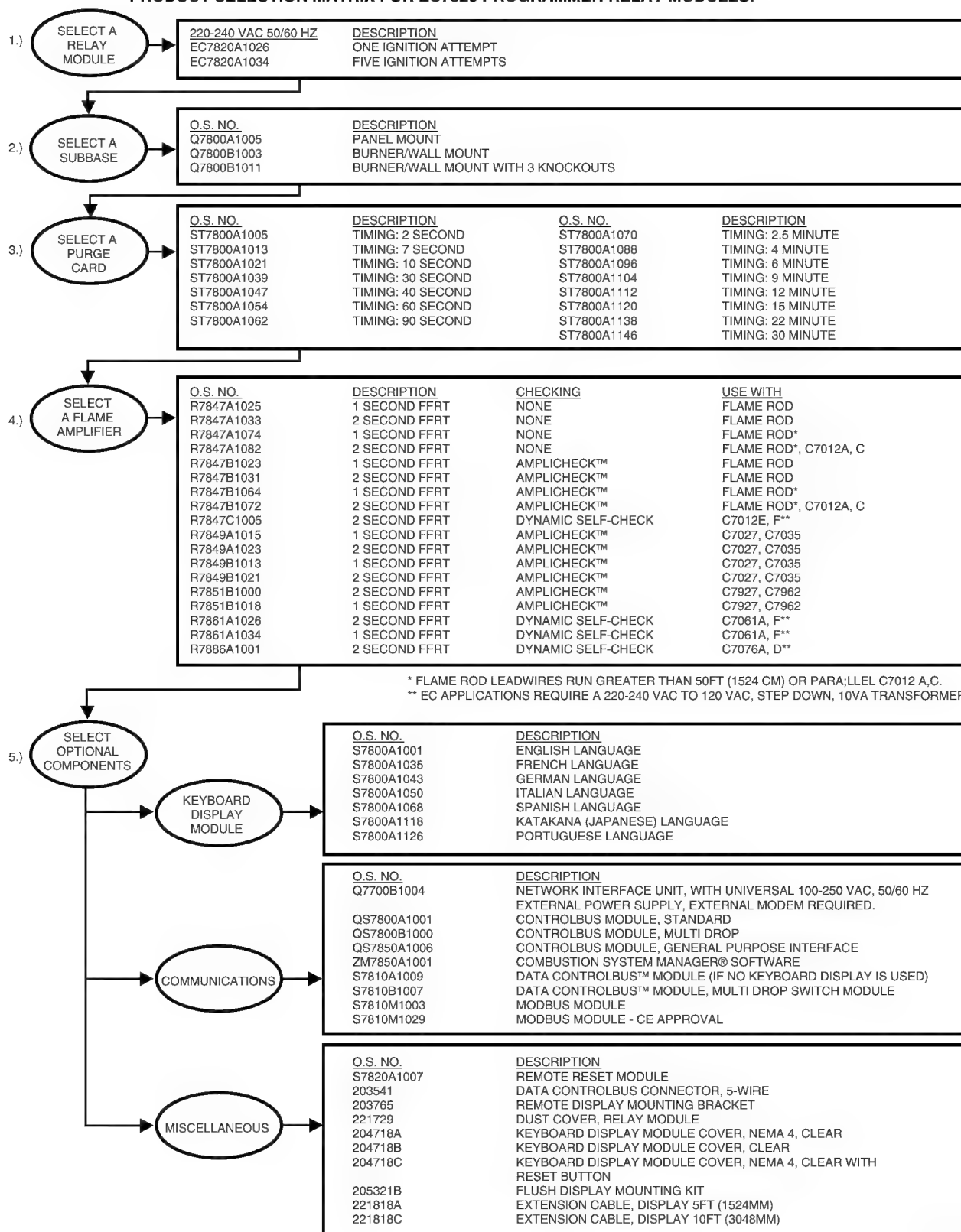
PRODUCT SELECTION MATRIX FOR EC7810 PROGRAMMER RELAY MODULES:



M15515B

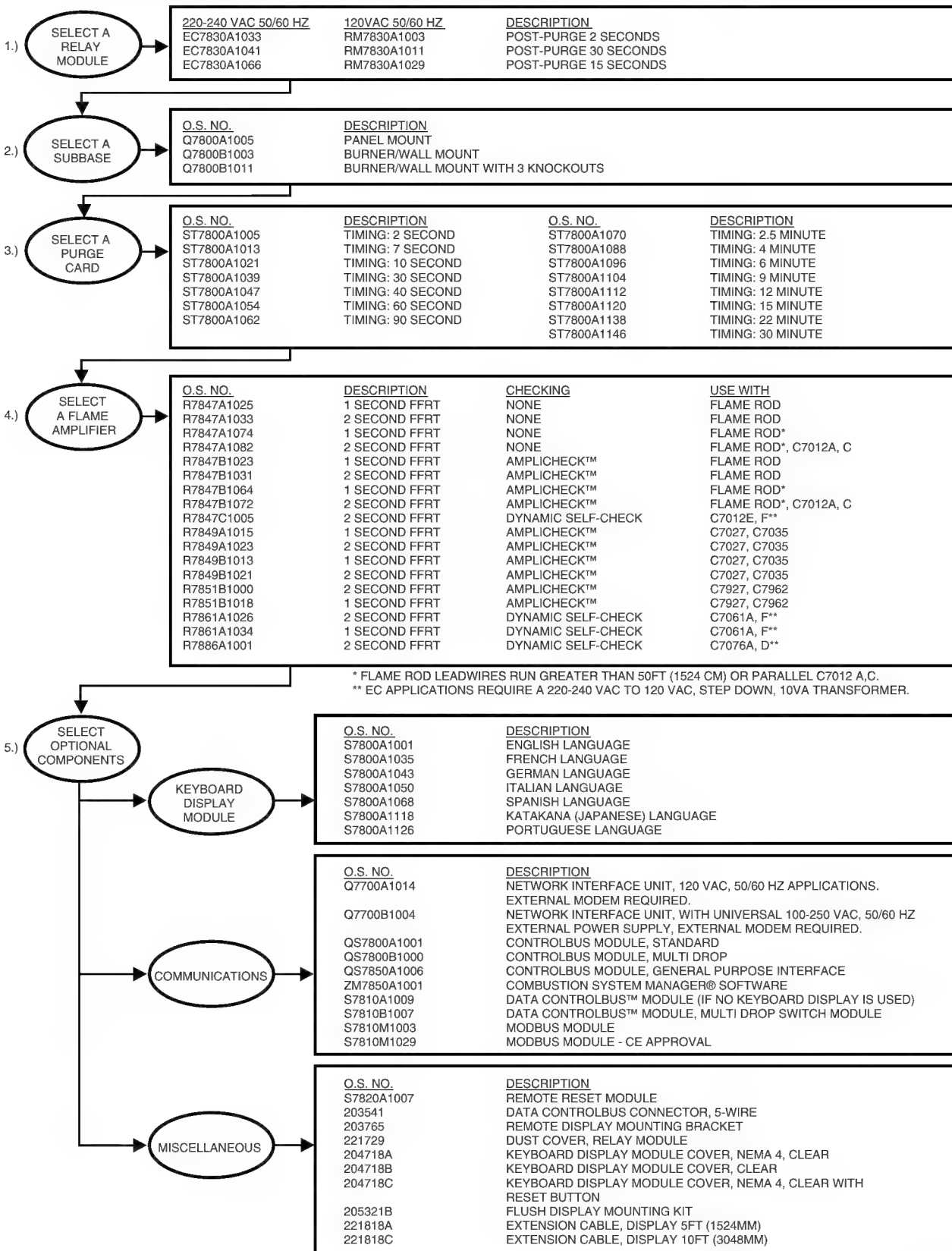
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC7820 PROGRAMMER RELAY MODULES:



M15516B

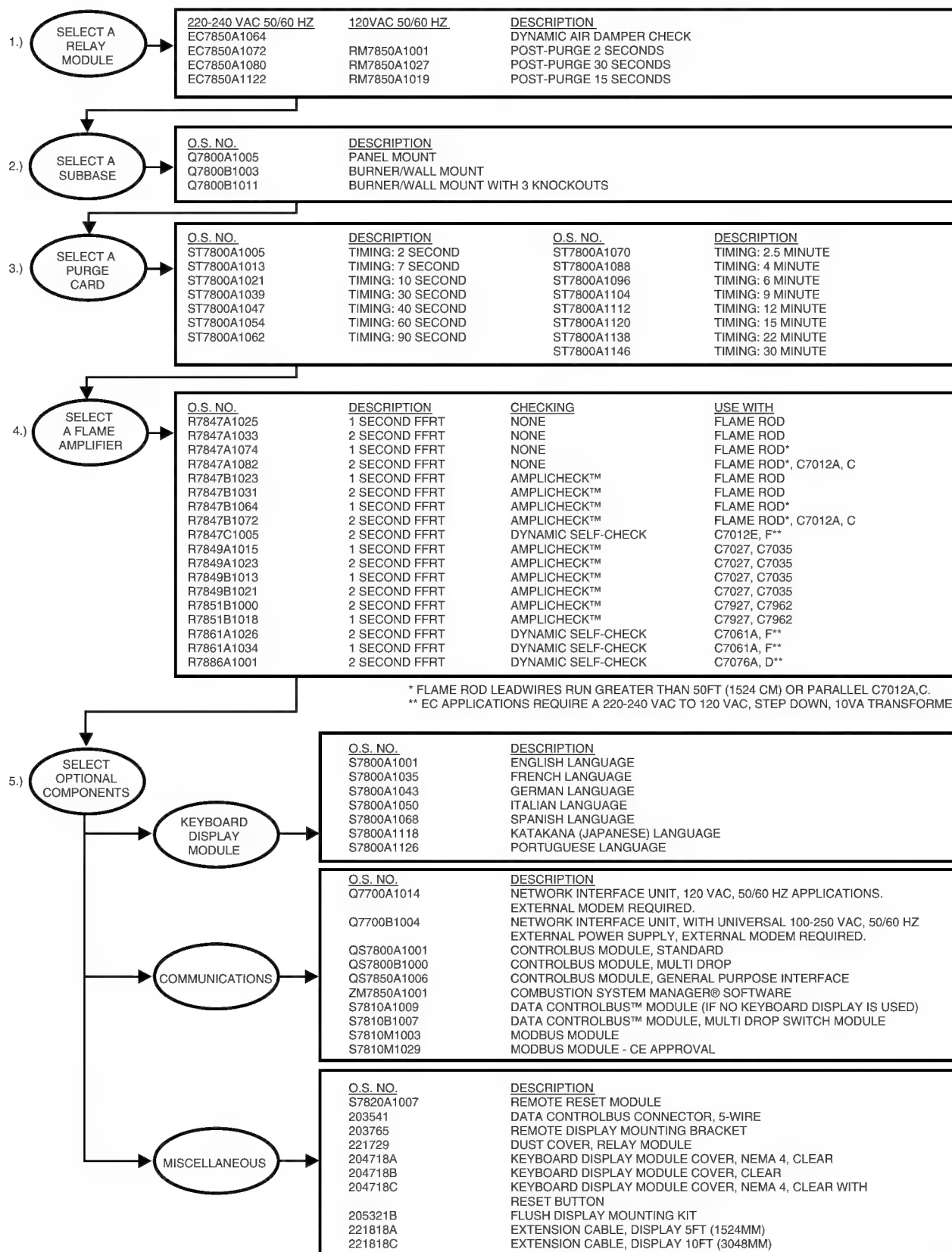
PRODUCT SELECTION MATRIX FOR EC/RM7830 PROGRAMMER RELAY MODULES:



M15517B

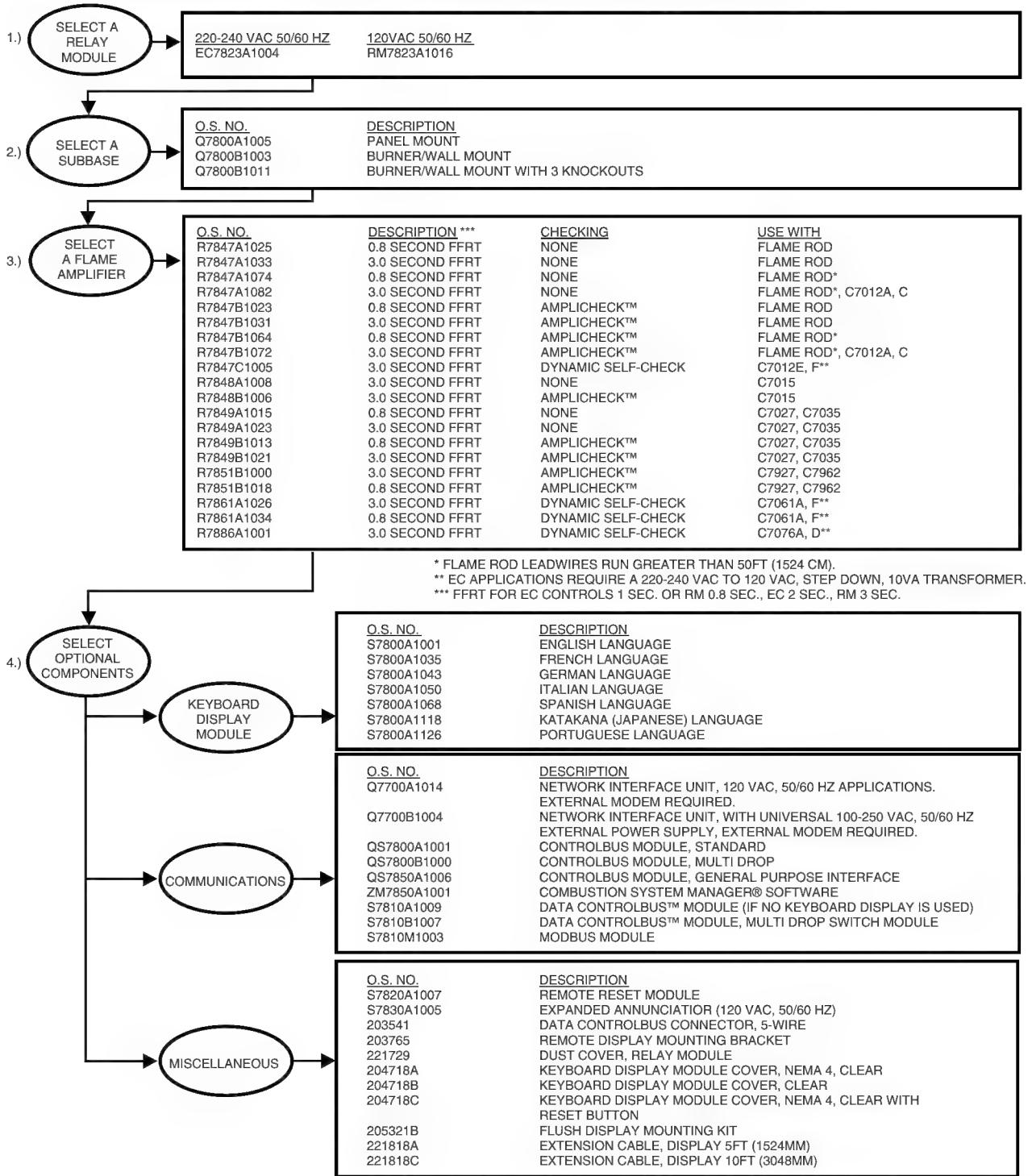
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC/RM7850 PROGRAMMER RELAY MODULES:



M15519B

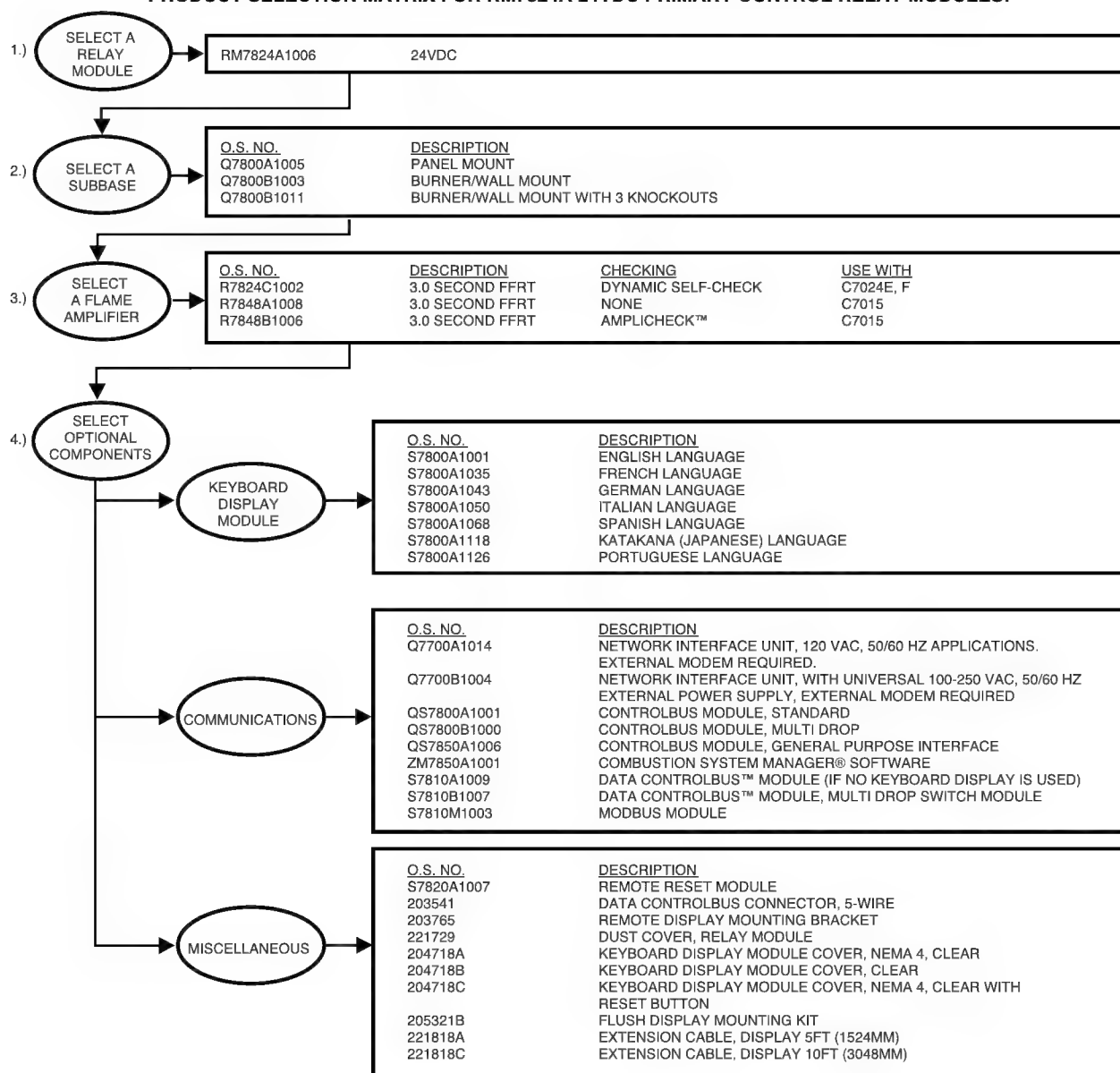
PRODUCT SELECTION MATRIX FOR EC/RM7823 FLAME SWITCH RELAY MODULES:



M15520B

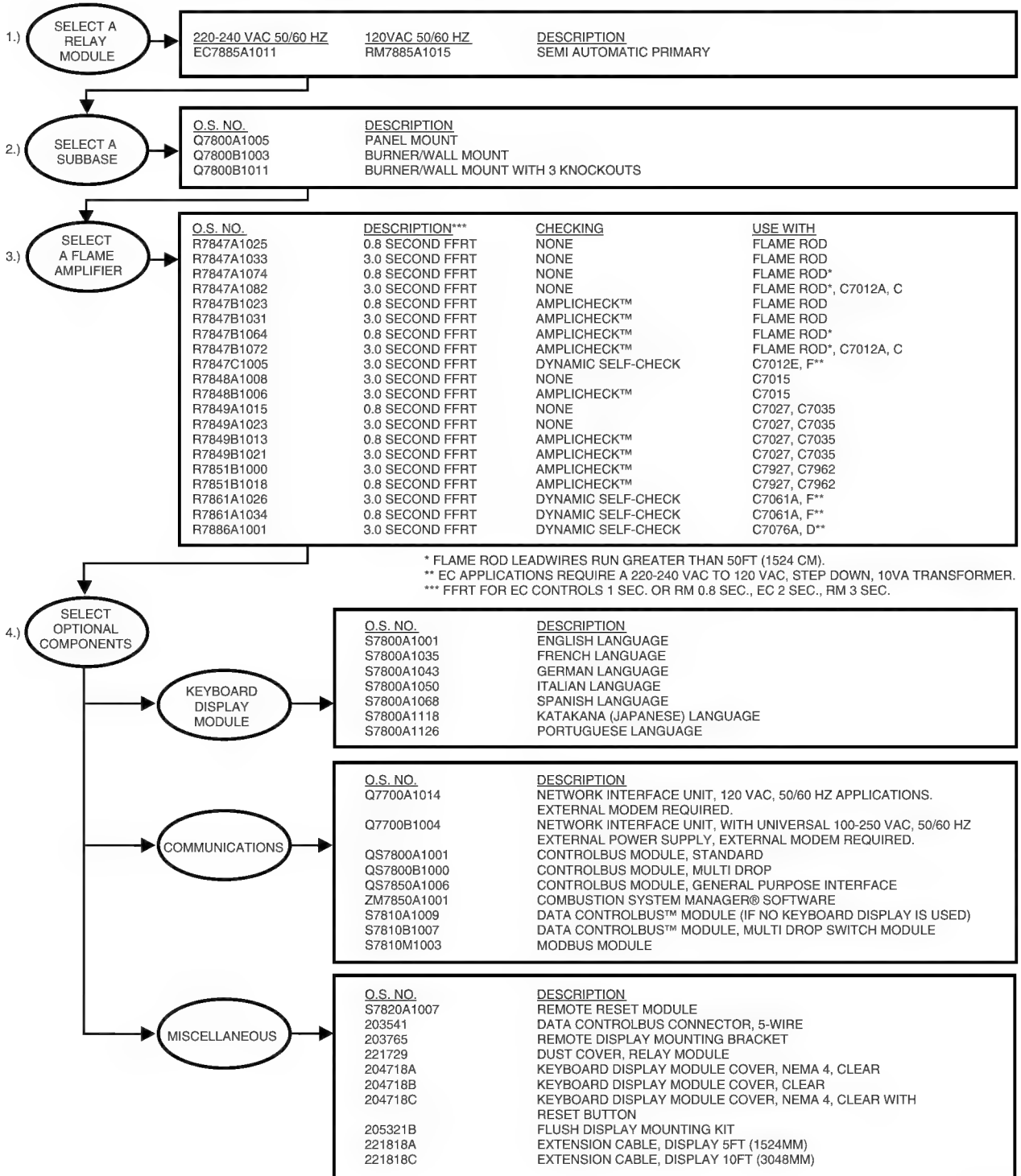
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7824A 24VDC PRIMARY CONTROL RELAY MODULES:



M15521A

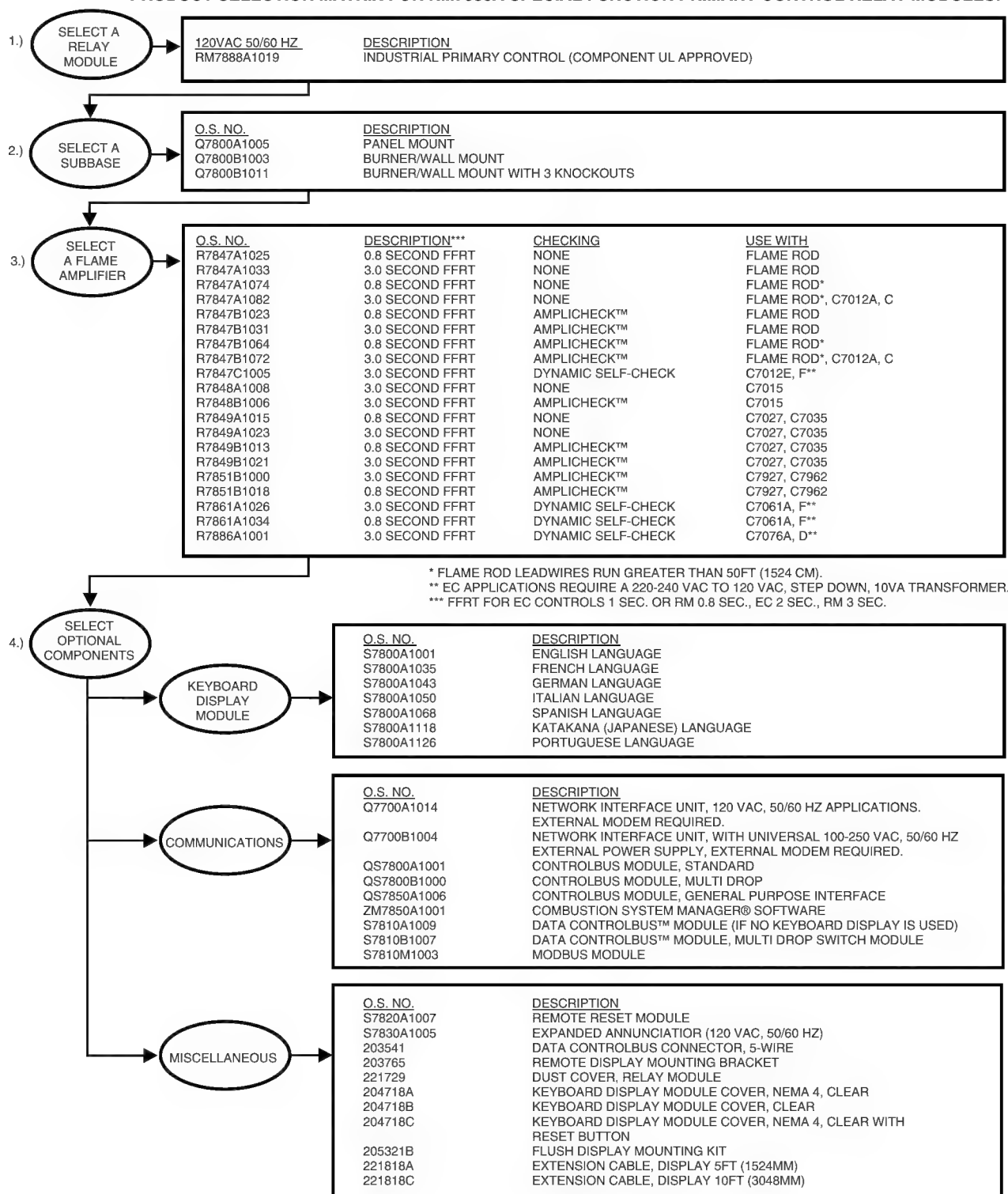
PRODUCT SELECTION MATRIX FOR EC/RM7885 MANUAL START PRIMARY RELAY MODULES:



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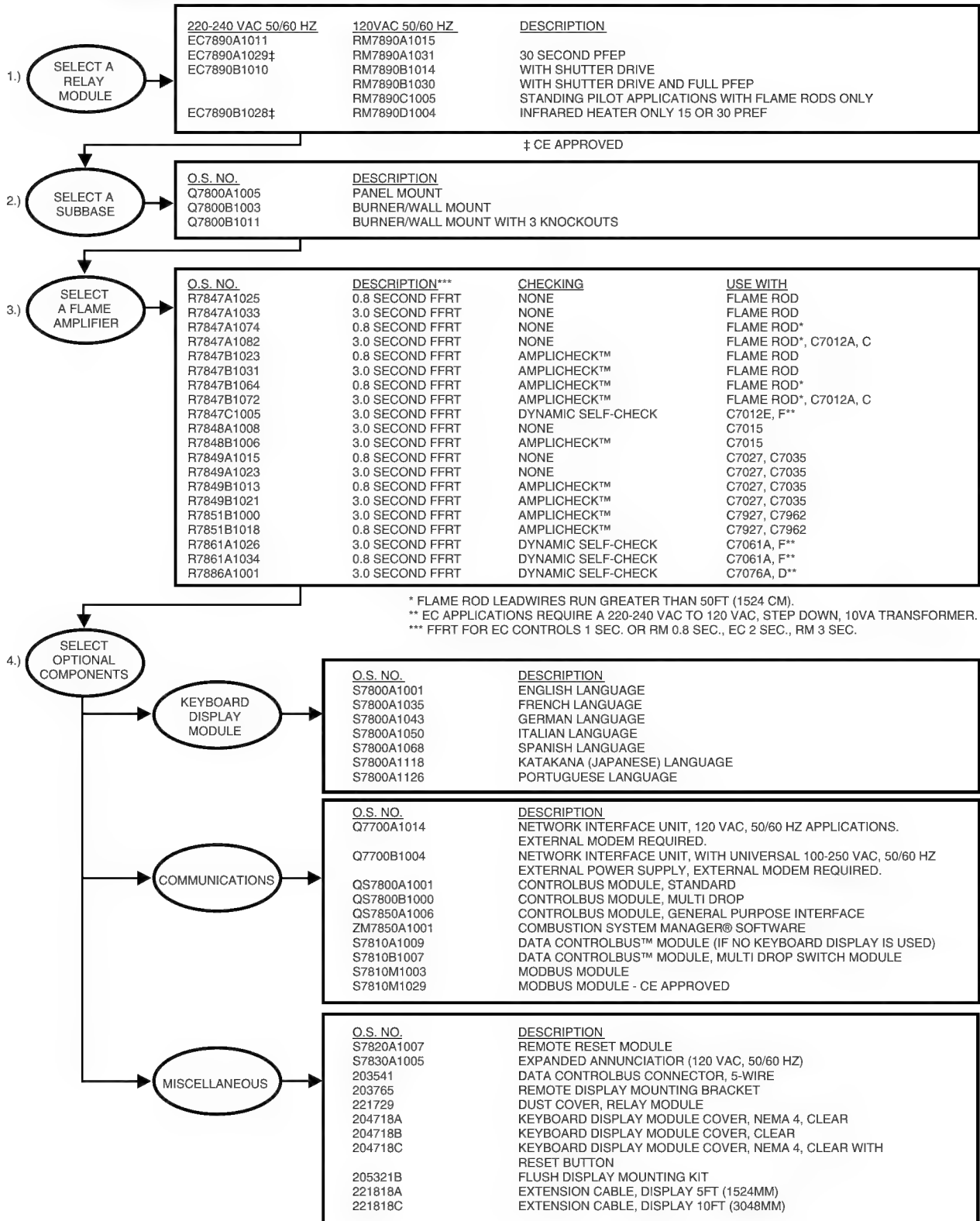
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7888A SPECIAL FUNCTION PRIMARY CONTROL RELAY MODULES:



M15523B

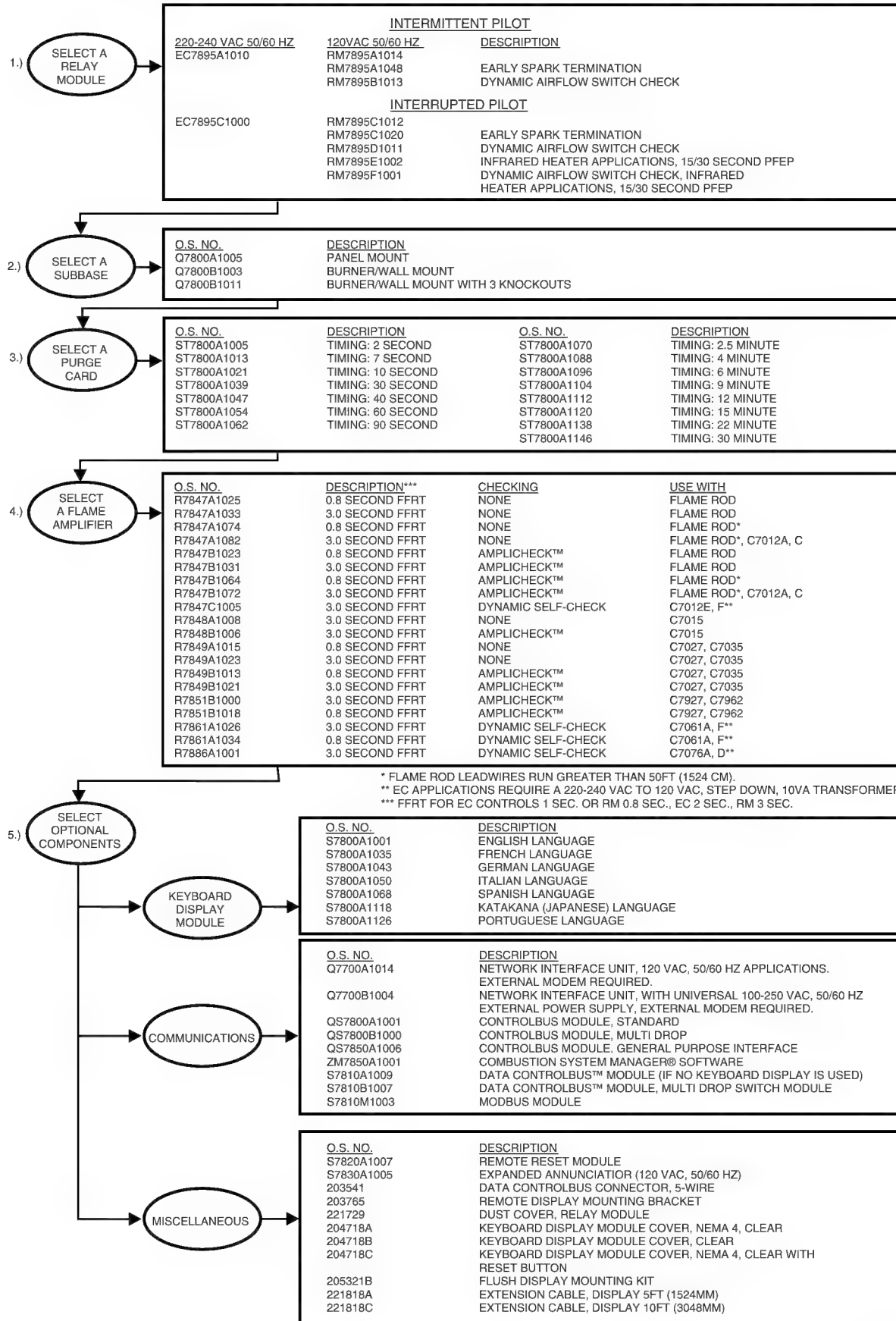
PRODUCT SELECTION MATRIX FOR EC/RM7890 ON/OFF PRIMARY CONTROL RELAY MODULES:



M15524B

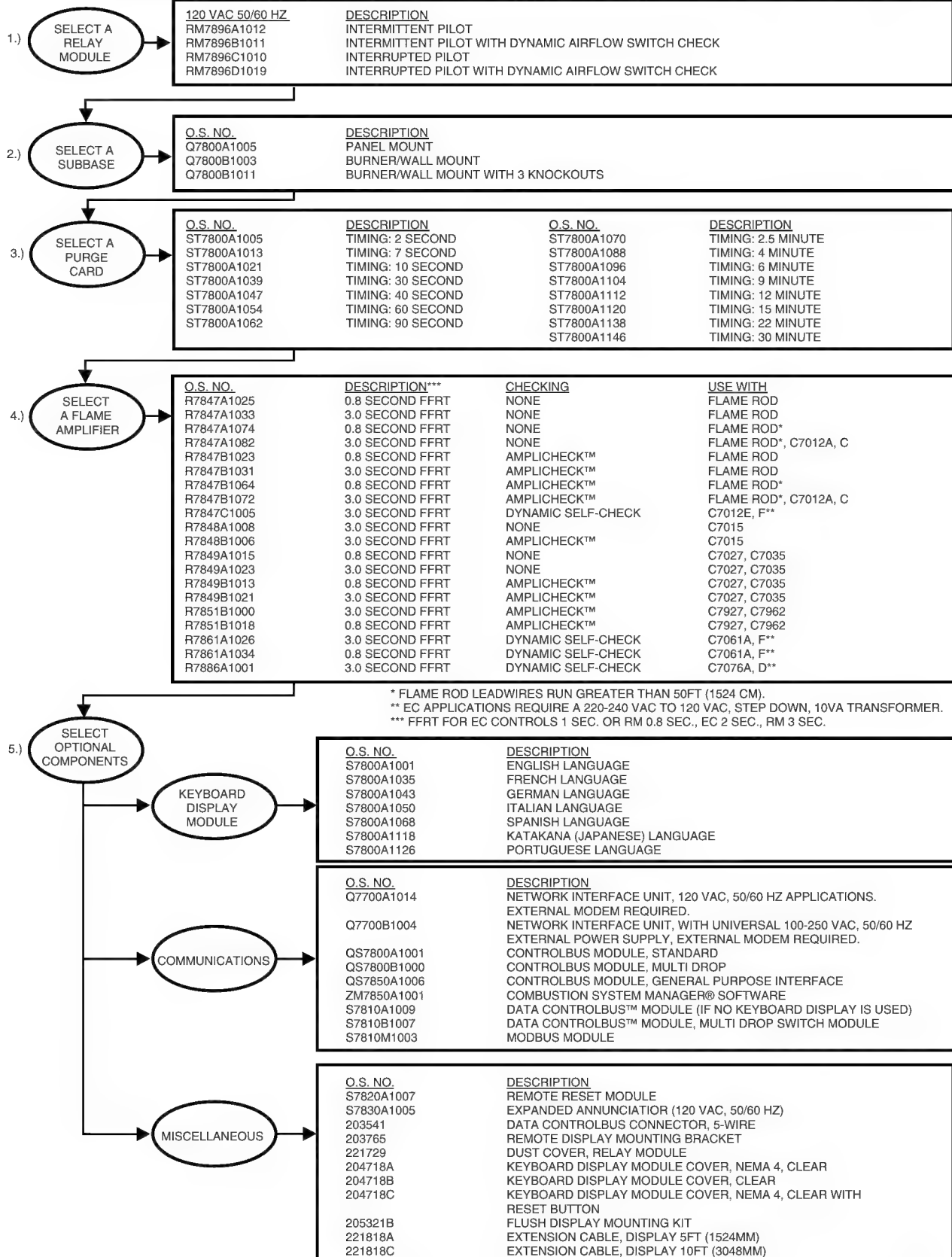
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR EC/RM7895 ON/OFF WITH PURGE PRIMARY RELAY MODULES:



M15525B

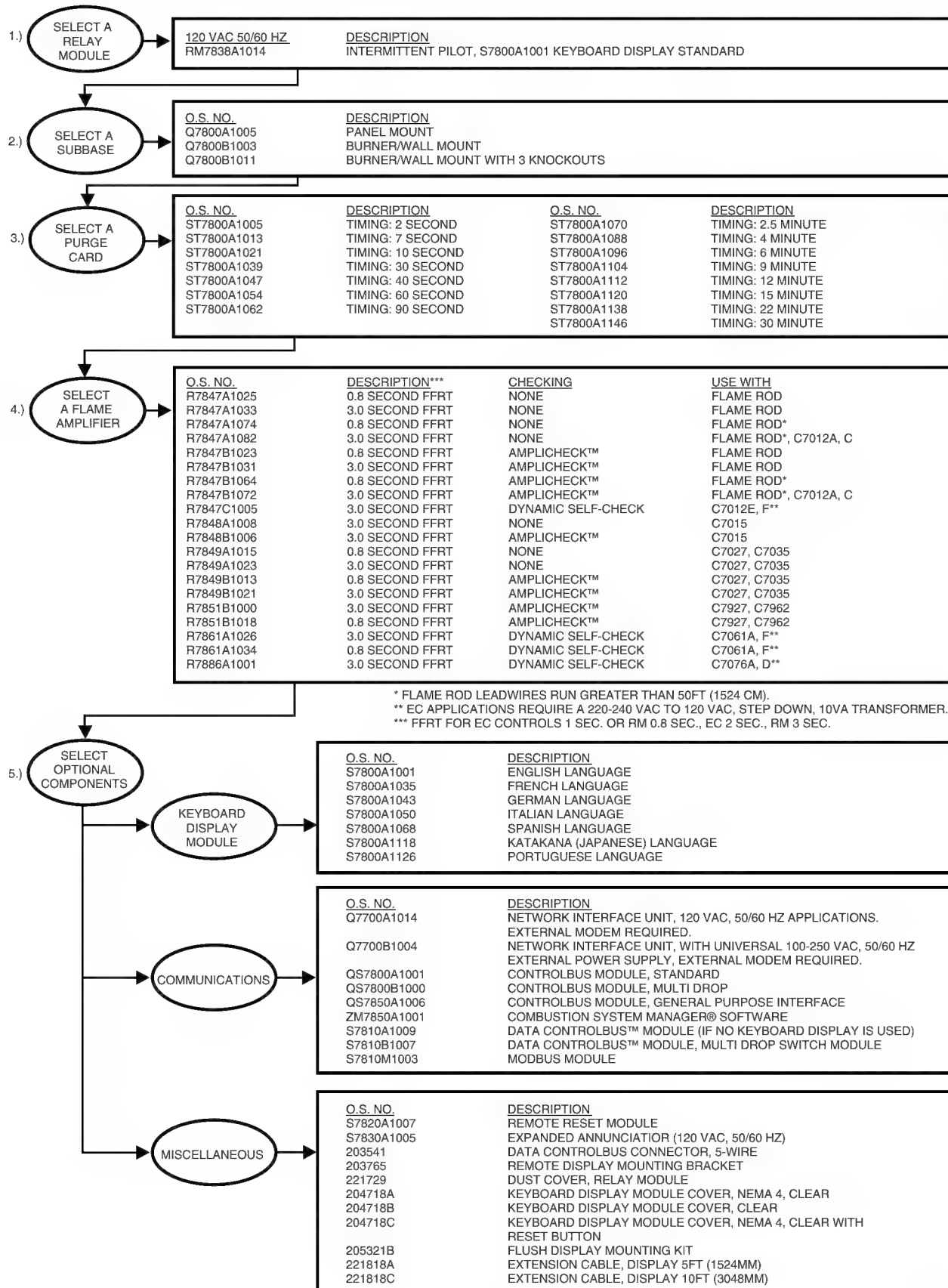
PRODUCT SELECTION MATRIX FOR RM7896 ON/OFF WITH PRE- AND POST-PURGE PRIMARY RELAY MODULES:



M15526B

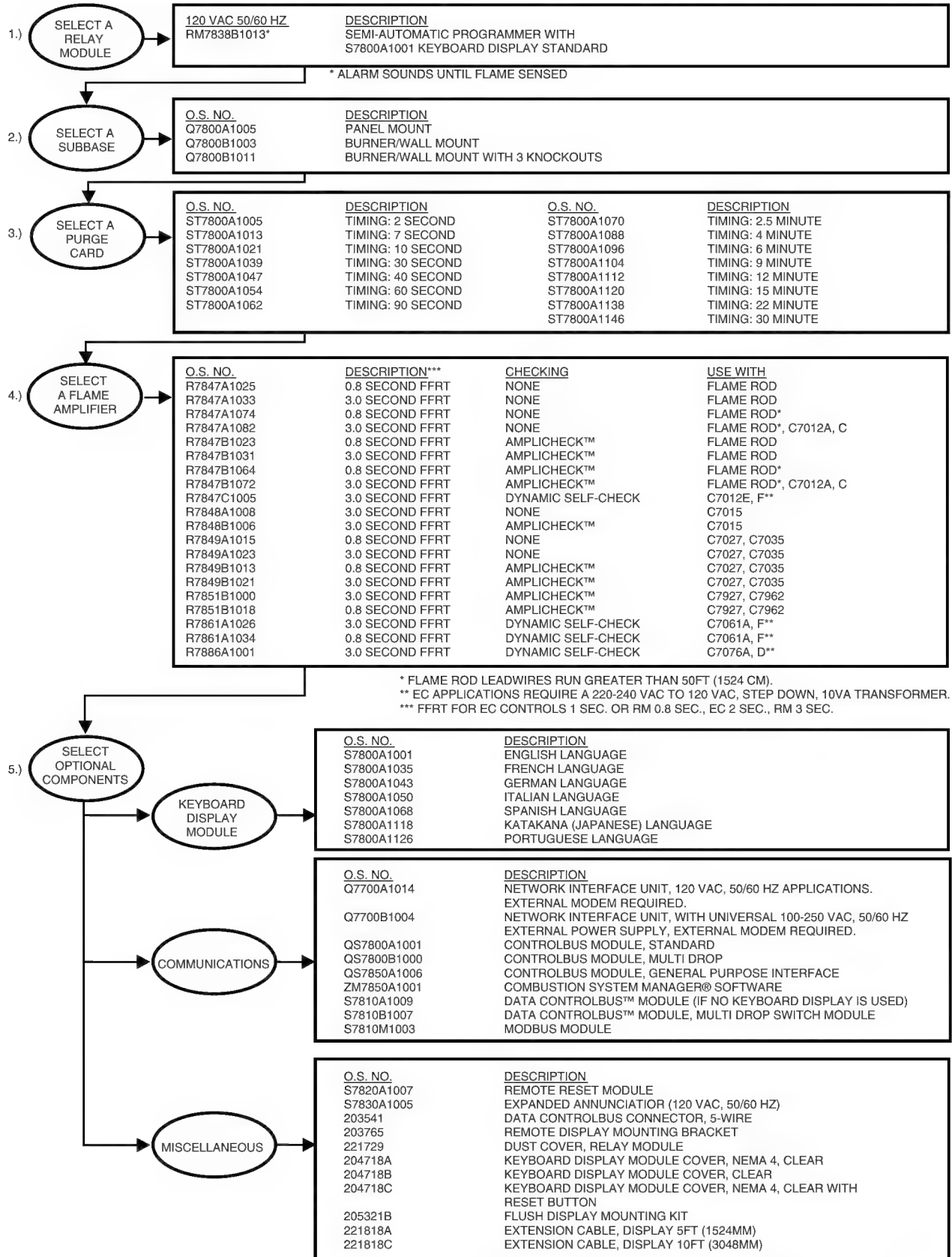
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7838A MANUAL START WITH PURGE INDUSTRIAL PRIMARY RELAY MODULE:



M15527B

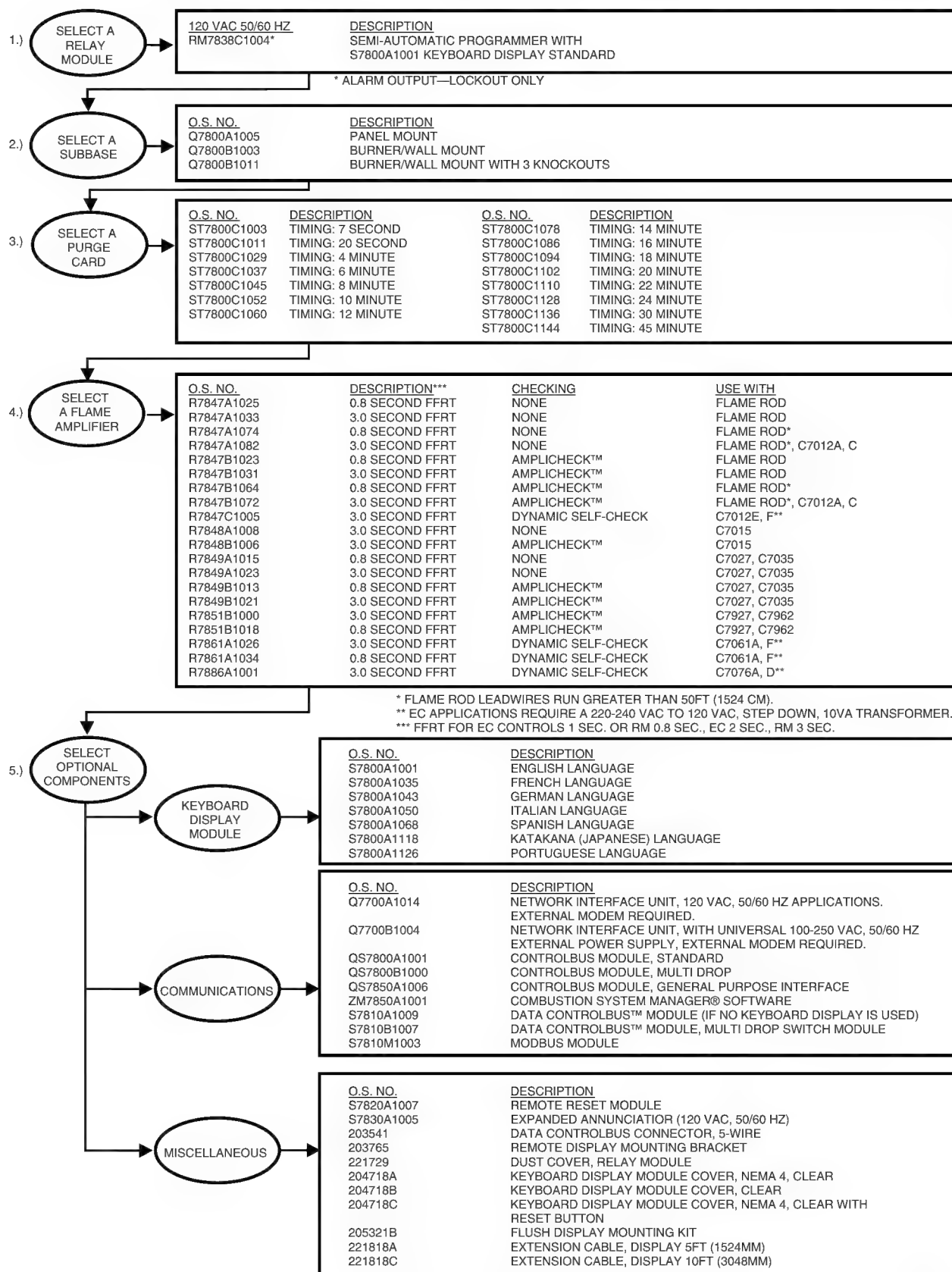
PRODUCT SELECTION MATRIX FOR RM7838B MANUAL START INDUSTRIAL PROGRAMMER RELAY MODULE:



M15528B

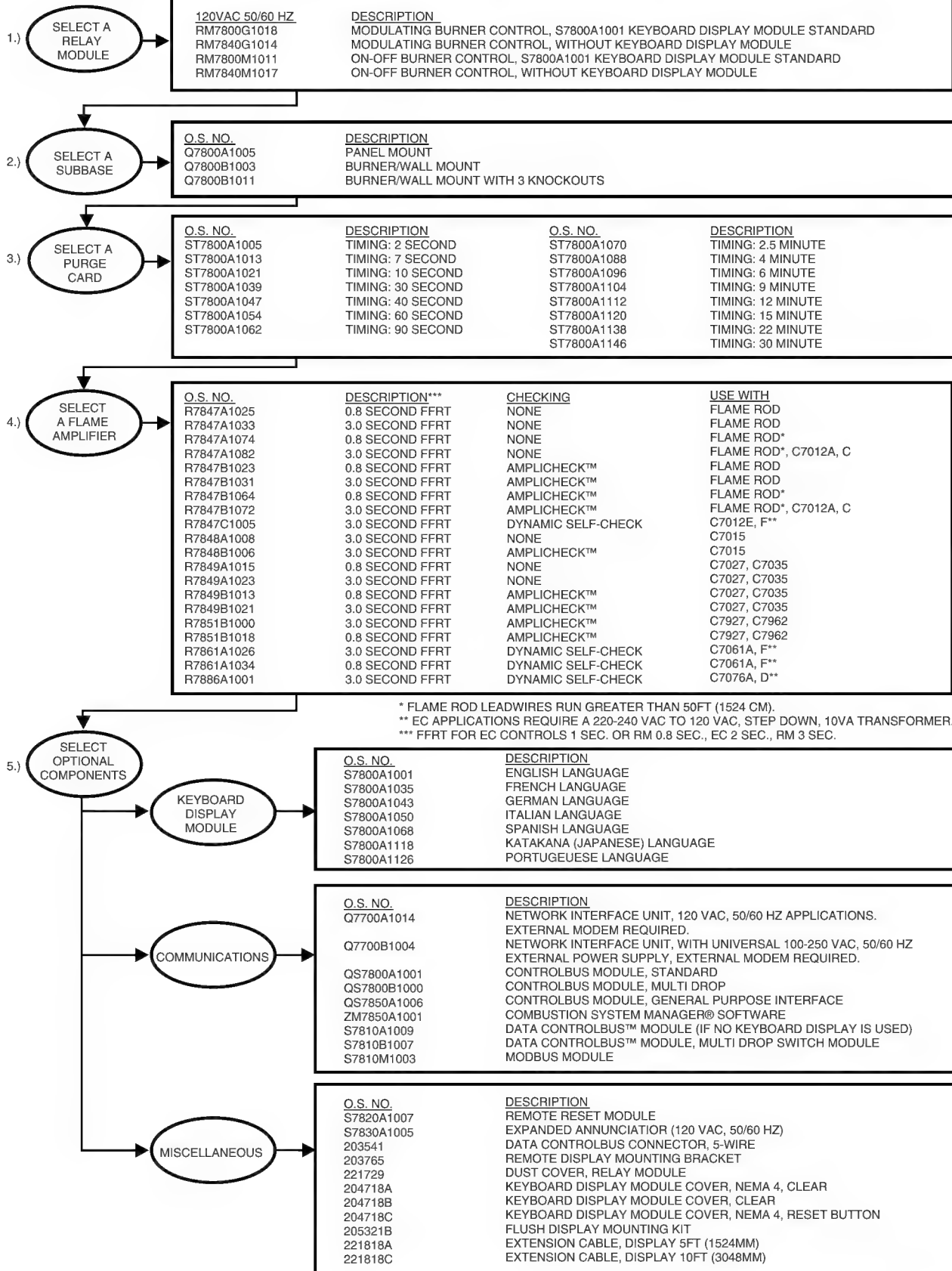
Product Selection Matrix

PRODUCT SELECTION MATRIX FOR RM7838C MANUAL START INDUSTRIAL PROGRAMMER RELAY MODULE:



M18830A

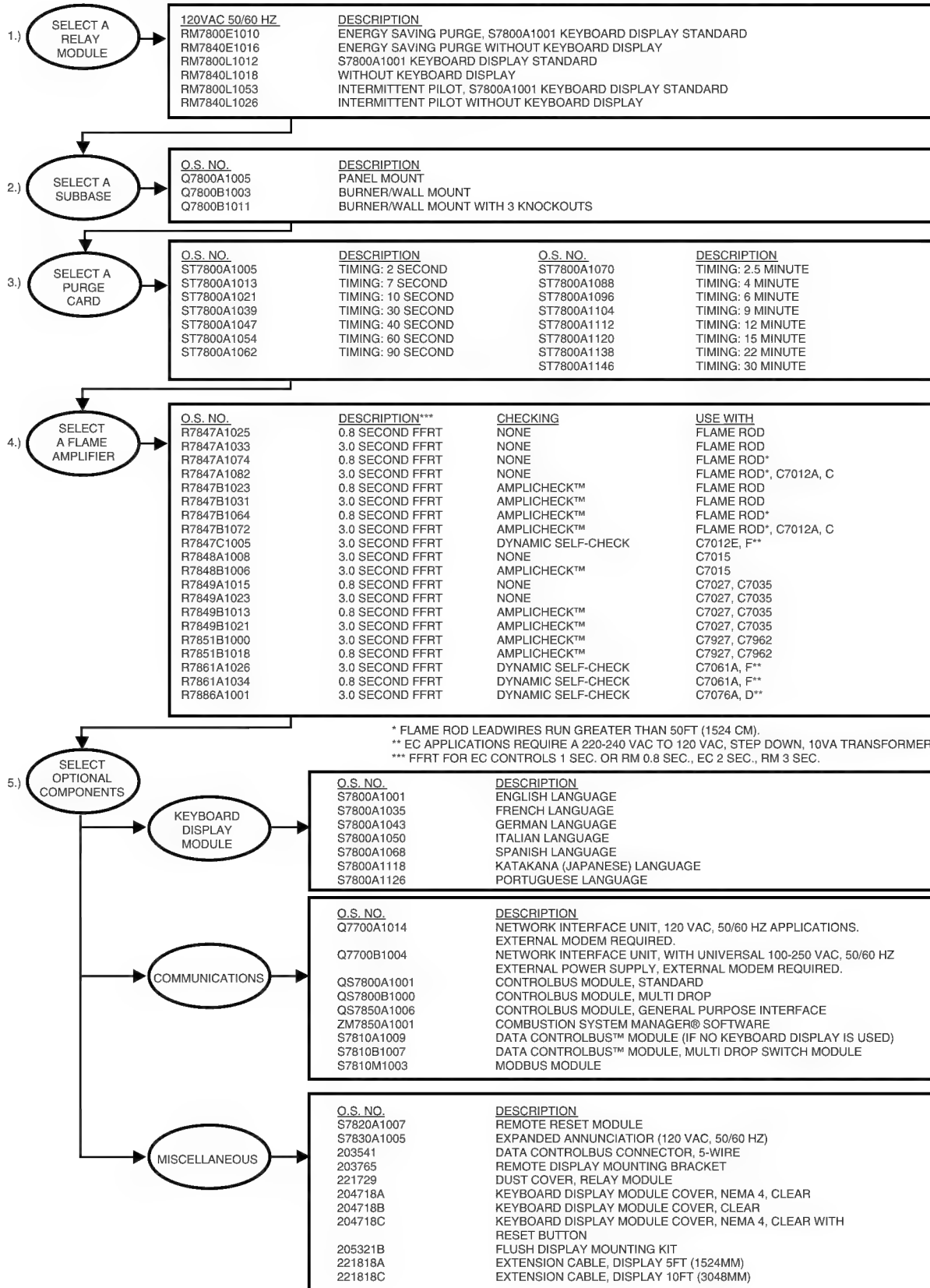
PRODUCT SELECTION MATRIX FOR UL/CSA RM78XXG,M PROGRAMMER RELAY MODULE:



M15529B

Product Selection Matrix

PRODUCT SELECTION MATRIX FOR FM/IRI RM78XXE, L PROGRAMMER RELAY MODULE:



M15530B

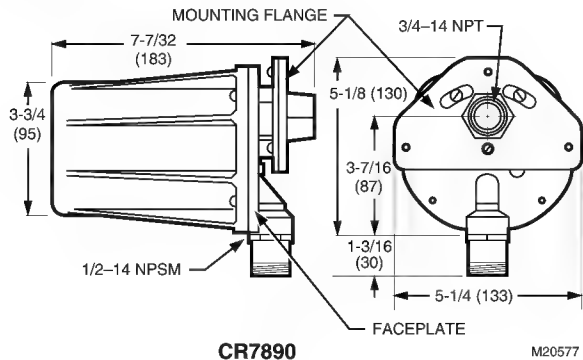
CR7890 Integrated Burner Control



The CR7890B Integrated Burner Control consists of a self contained relay module, amplifier and a shutter type solid state Ultraviolet Detector for sensing the ultraviolet radiation generated by the combustion of gas, oil, or other fuels.

- Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor to provide the UV sensor checking function. Amplifier circuitry components are checked from the microprocessor in the CR7890B Control.
- Device can be mounted horizontally, vertically or at any other angle. The device has faceplate alignment and integral locating reference points to assure proper shutter mechanism operation.
- Quartz viewing window is field replaceable.
- CR7890B1019 uses Brad Harrison® 3R9006A20A120 connector.
- A swivel mount is available to facilitate flame sighting.
- -40°F (-40°C) rated ultraviolet sensing tube.
- High pressure 50 psi (345 kPa) quartz viewing window, magnifying lens and antivibration mount are available as accessories.
- Housing meets NEMA 4 enclosure standards. (NEMA 1 when access cover is used.)
- Protective heat block built into mounting flange.
- Power LED blinks a fault code when device is in ALARM state.
- Optional Keyboard Display Module (KDM)

Dimension Diagrams



Dimensions, Approximate: 5 1/4 in. wide, 5 1/8 in. high, 7 7/32 in. deep (133 mm wide, 130 mm high, 183 mm deep)

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 1.0 G environment

Weight (lb): 3.78 lb (1.71 kg)

Approvals:

Canadian Standards Association: Certified

Control Safety Devices: Acceptable: CSD-1.

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Accessories:

32005580-001 Cable for connecting Keyboard Display Module (KDM) to CR7890

32006648-001 Nema I Cover for CR7890B

32007181-001 Wiring Harness with 9-pin Brad Harrison® to CR7890

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Pilot Type	Description
			Main	Pilot		
CR7890B1019	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec	10 sec	intermittent	Integrated Burner Control w/Brad Harrison connector

7800 SERIES Relay Modules

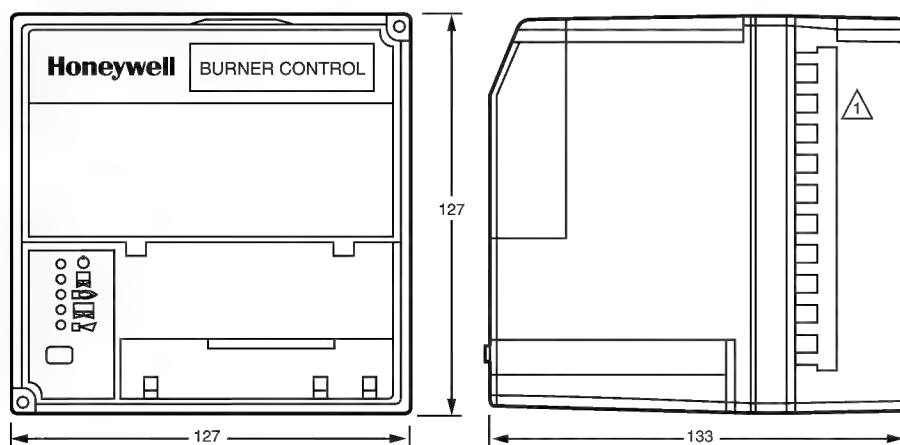
EC7810; EC7820 Primary Control Meeting European Community Timings



Microprocessor-based integrated burner control for automatically fired gas, oil, or combination fuel single burner atmospheric with fan applications. Provides automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics, and troubleshooting.

- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Four LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Dimension Diagrams



1 REMOVE ONLY FOR TERMINAL TEST ACCESS.

M12821

Preignition: Yes

PostPurge: 5 sec

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

PrePurge: Determined by ST7800 Purge Timer Card

Vibration: 0.5 G environment

Weight (lb): 1 lb 10 oz (0.7kg)

European Directives: Complies with Gas Appliance Directive (90/269/EEC). Low Voltage Directive (73/23/EEC). EMC Directive (89/336/EEC).

Approvals:

Factory Mutual: Approved: Report No. J.I.OY0A9.AF.

Gastec/European: GASTEC: CE-63AP3070/1, Approved to EN298.

Industrial Risk Insurers: IRI Acceptable.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Second Stage Pilot Valve	Comments
				Main	Pilot				
EC7810A1027	—	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	5 sec or 8 sec or intermittent	5 sec or 10 sec	Lockout	interrupted	Intermittent	1 ignition attempt, Includes Modulation
EC7810A1035	—	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	5 sec or 8 sec or intermittent	5 sec or 10 sec	Lockout	interrupted	Intermittent	5 ignition attempts, Includes Modulation
EC7820A1026	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	5 sec or 8 sec or intermittent	5 sec or 10 sec	Lockout	interrupted	Intermittent	1 ignition attempt, Includes Modulation
EC7820A1034	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	5 sec or 8 sec or intermittent	5 sec or 10 sec	Lockout	interrupted	Intermittent	5 ignition attempts, Includes Modulation

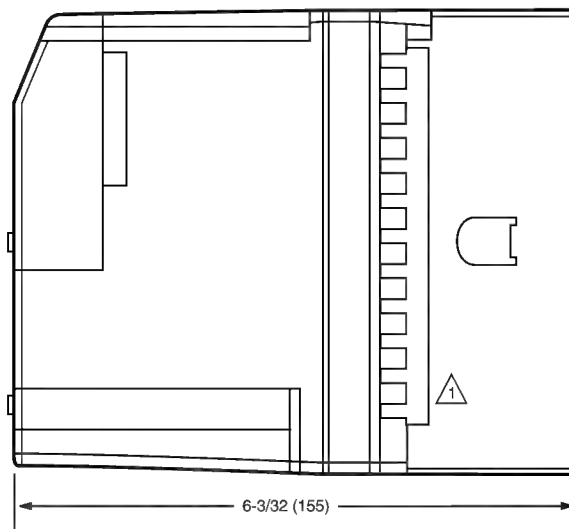
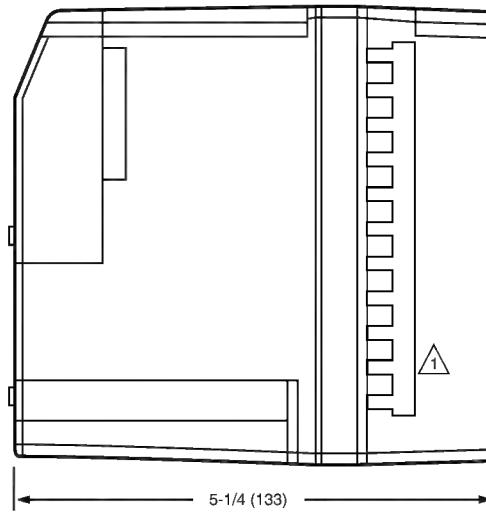
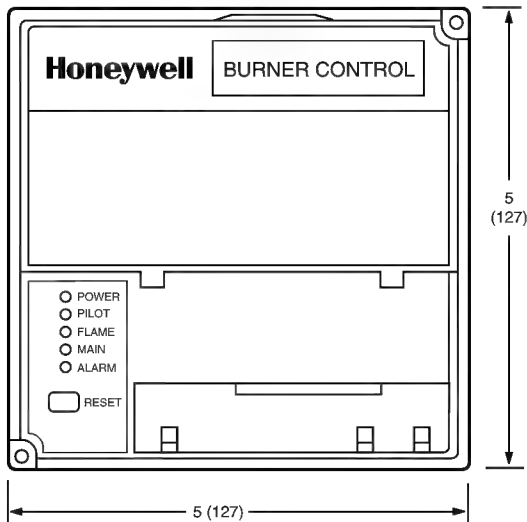
RM7800 Programmers



Microprocessor-based integrated burner control for automatically fired gas, oil, coal or combination fuel single burner applications. Provides safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and trouble shooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.
- Includes Keyboard Display Module.

Dimension Diagrams



1 REMOVE ONLY FOR
TERMINAL TEST ACCESS.

M15518

7800 SERIES Relay Modules

Early Spark Termination: Yes, 5 sec

Preignition: Yes

PostPurge: 15 sec

PrePurge: Determined by ST7800 Purge Timer Card

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 10 oz (0.7kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases.

R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal

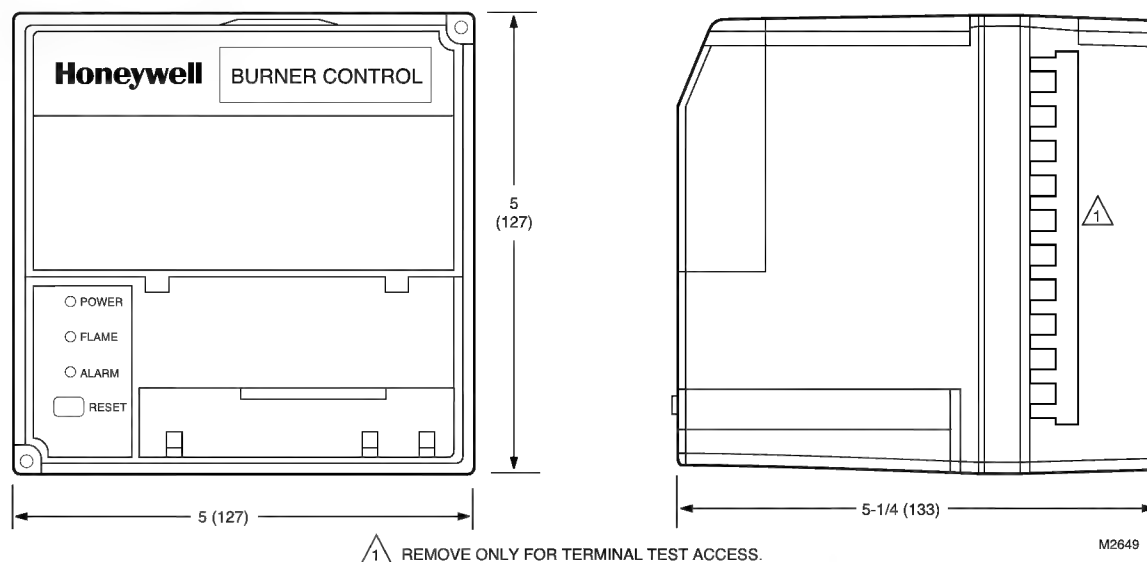
Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Second Stage Pilot Valve	Comments
				Main	Pilot				
RM7800E1010	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or 15 sec	4 sec or 10 sec	Lockout	interrupted	interrupted	Includes S7800 Display, LHL-LF/HF Proven
RM7800G1018	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec, 15 sec, 30 sec, or Intermittent	4 sec or 10 sec	Running	intermittent	selectable	Includes S7800 Display, LHL-LF Proven
RM7800L1012	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or 15 sec	4 sec or 10 sec	Lockout	interrupted	interrupted	Includes S7800 Display, LHL-LF/HF Proven
RM7800L1053	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10/15 sec or Intermittent	4 sec or 10 sec	Lockout	interrupted	Intermittent	Includes S7800 Display, LHL-LF/HF Proven
RM7800M1011	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or Intermittent	4 sec or 10 sec	Running	interrupted	Intermittent	Includes S7800 Display, On/Off LF Proven

EC7823; RM7823 Flame Switch



Dimension Diagrams



Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 13 oz (0.8kg)

Approvals:

Factory Mutual: Approved: Report No. J.I.OY0A9.AF.

Industrial Risk Insurers: IRI Acceptable.

Required Components: Q7800A,B Universal Wiring Subbases.
R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier.

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Comments	Description
EC7823A1004	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	two SPDT outputs	Flame Switch
RM7823A1016	120 Vac (+10/-15%)	50/60 Hz (±10%)	two SPDT outputs	Flame Switch

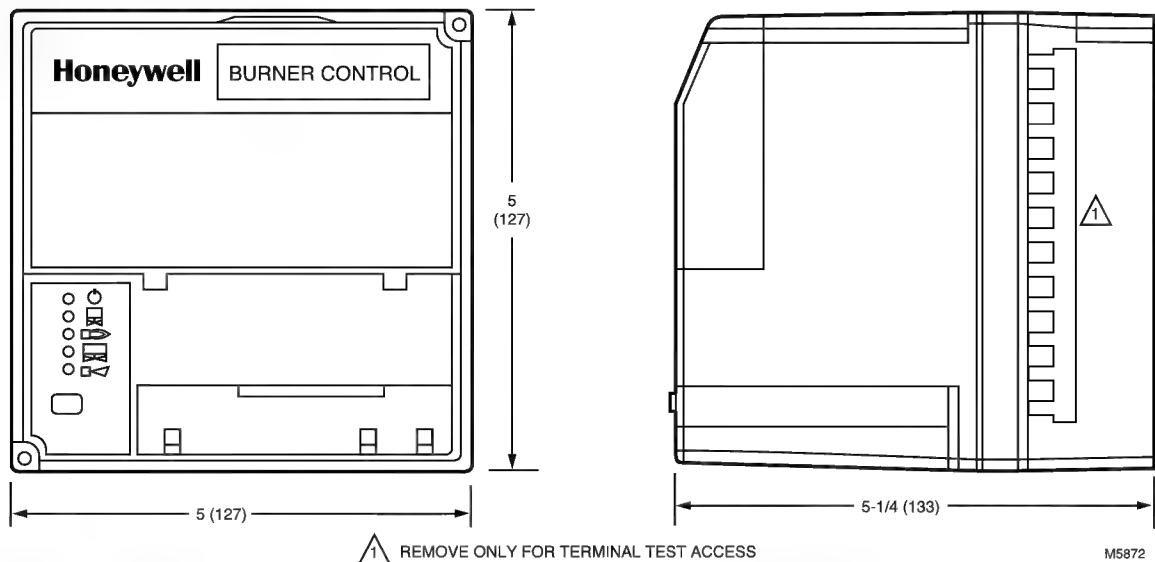
7800 SERIES Relay Modules

RM7824 On-Off Primary Control



- 24 Vdc microprocessor-based integrated burner control for automatically fired gas, oil or combination fuel single burner applications. Provides level of safety, functional capability and features beyond the capacity of conventional controls.**
- For use with R7824C Amplifier with C7024E,F Flame Detectors and R7848A,B with C7015A Flame Detectors.
 - Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
 - Five LEDs provide sequence information.
 - Selectable recycle or lockout on loss of flame airflow.
 - Shutter drive output for use with dynamic self-check Flame detectors.
 - Access for external electrical voltage checks.
 - Plug-in flame amplifier.
 - Nonvolatile memory retains history files and lockout status after loss of power.

Dimension Diagrams



Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)
Vibration: 0.5 G environment
Weight (lb): 1 lb 13 oz (0.8kg)
Approvals:
Canadian Standards Association: Certified, File No. LR95329-3.
Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.
Industrial Risk Insurers: IRI Acceptable.
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.
Required Components: Q7800A,B Universal Wiring Subbases.
R7824 or R7848 Flame Signal Amplifier.

Product Number	Electrical Ratings, Power Supply (Vac)	Flame Establishing Period		Pilot Type	Description
		Main	Pilot		
RM7824A1006	24 Vdc, +7%/-8%. Load:500 VA Max.	Intermittent	4 sec or 10 sec	intermittent	Primary Control, 24 Vdc

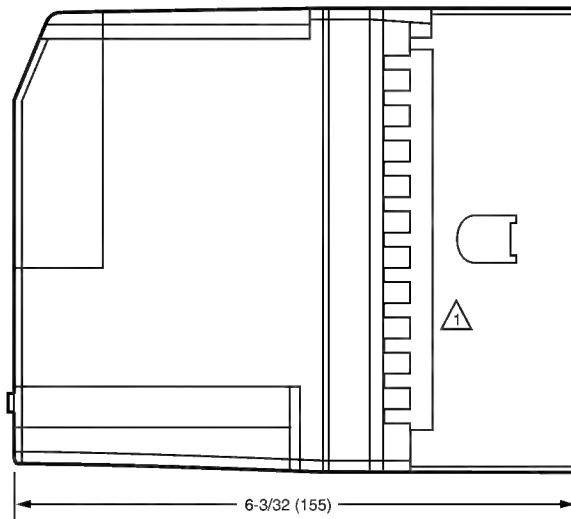
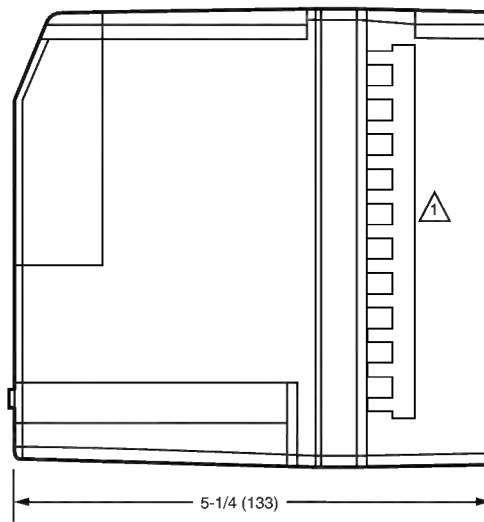
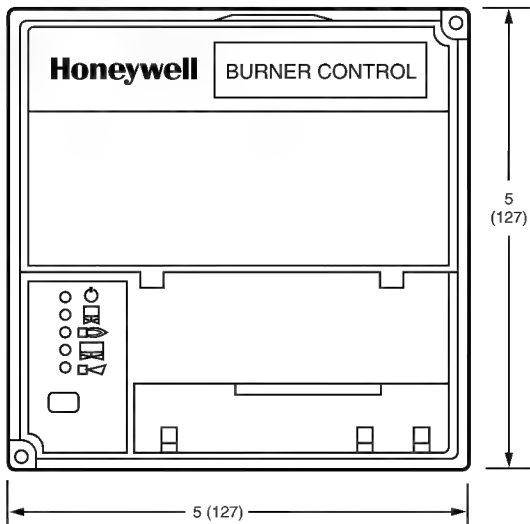
EC7830; EC7850; RM7830; RM7850 Programming Control meeting European Community Timings



Microprocessor-based integrated burner control for full modulation applications. Provides automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics, and troubleshooting.

- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in amplifiers.
- Local or remote annunciation of operation and fault information (optional).
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Dimension Diagrams



1 REMOVE ONLY FOR
TERMINAL TEST ACCESS.

M15532

7800 SERIES Relay Modules

Preignition: Yes

PostPurge: 2 sec

PrePurge: Determined by ST7800 Purge Timer Card

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 10 oz (0.7kg)

European Directives: Complies with Gas Appliance Directive (90/396/EEC). Low Voltage Directive (73/23/EEC). EMC Directive (89/336/EEC).

Approvals:

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

Gastec/European: GASTEC: CE-63AP3070/1, Approved to EN298.

Industrial Risk Insurers: IRI Acceptable.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Second Stage Pilot Valve	Comments
				Main	Pilot				
EC7830A1033	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
EC7830A1041	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
EC7830A1066	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
EC7850A1064	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL-LF/HF Proven
EC7850A1072	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL- LF/HF Proven
EC7850A1080	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL-LF/HF Proven
EC7850A1122	selectable	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL-LF/HF Proven
RM7830A1003	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
RM7830A1011	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
RM7830A1029	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	—
RM7850A1001	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL- LF/HF Proven
RM7850A1019	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL-LF/HF Proven
RM7850A1027	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	3 sec or 5 sec or intermittent	3 sec or 5 sec	Lockout	interrupted	Intermittent	LHL- LF/HF Proven

RM7838A Manual Start Industrial Primary Control with Purge



Microprocessor-based integrated burner control for industrial semi-automatically fired gas, oil, coal or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams
See diagram on page 689

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

PrePurge: Determined by ST7800 Purge Timer Card

Weight (lb): 1 lb 10 oz (0.7kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Control Safety Devices: Acceptable: CSD-1.

- Functions include purge, burner pilot startup, flame supervision, system status indication, system or self diagnosis and troubleshooting.
- Delays admission of fuel to combustion chamber until pilot flame has been proven and then monitors the flame through the run period while providing system status indication.
- Includes Keyboard Display Module.
- Five LEDs provide sequence information.
- Intermittent pilot valve.
- Interchangeable plug-in flame amplifier.
- Access for external electrical voltage checks.
- Non-volatile memory retains history files and lockout status after loss of power.
- Selectable pilot flame establishing period.
- Provides application flexibility and optional communication interface capability.
- Compatible with existing Honeywell flame detectors.

Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Comments
			Main	Pilot			
RM7838A1014	120 Vac (+10/-15%)	50/60 Hz (±10%)	Intermittent	4 sec or 10 sec	Running	intermittent	Includes S7800 Display

RM7838B,C Manual Start Industrial Programmers

Microprocessor-based integrated burner control with pilot hold function for industrial semi-automatically fired gas, oil, coal or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls. C alarms only on safety shutdown and requires ST7800C Purge Timers.

- Functions include automatic modulated high fire and low fire proven purge, burner pilot start up with pilot valve hold, special pilot valve hold from the Run condition, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Access for external electrical voltage checks.

Dimension Diagrams
See diagram on page 689

Early Spark Termination: Yes, 5 sec

Preignition: Yes

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

PrePurge: Determined by ST7800 Purge Timer Card

Vibration: 0.5 G environment

Weight (lb): 1 lb 10 oz (0.7kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Control Safety Devices: Acceptable: CSD-1.

- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.
- Includes Keyboard Display Module.
- Pilot Valve Hold func. requires R7847C R7861A or R7886A Plug-in Flame Signal Amplifiers.

Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Comments
			Main	Pilot			
RM7838B1013	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or Intermittent	4 sec or 10 sec	Lockout	selectable	Includes S7800 Display
RM7838C1004	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or Intermittent	15 second - Rm 7838C	Lockout	selectable	Includes S7800 Display

7800 SERIES Relay Modules

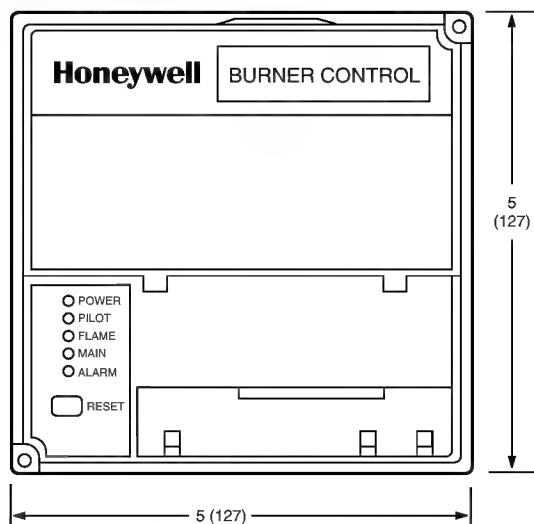
RM7840 Programmiers



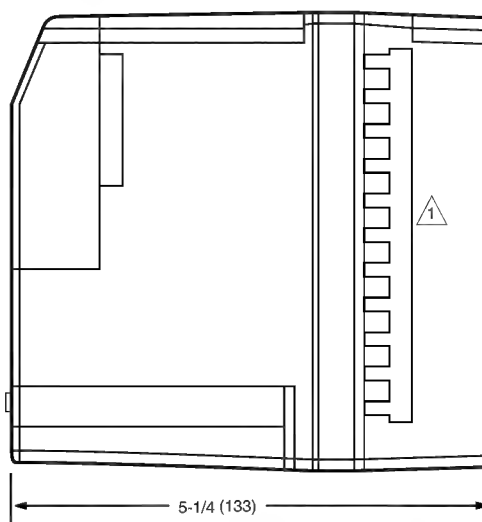
Microprocessor-based integrated burner control for automatically fired gas, oil, coal or combination fuel single burner applications. Provides safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Access for external electrical voltage checks.
- Application flexibility and communication interface capability.
- Five LEDs provide sequence information.
- Five function Run/Test Switch.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of RM7840 operation and fault information.
- Non-volatile memory retains history files and lockout status after loss of power.
- Compatible with existing Honeywell flame detectors.

Dimension Diagrams



1 REMOVE ONLY FOR TERMINAL TEST ACCESS.



M5003A

Early Spark Termination: Yes, 5 sec

Preignition: Yes

PrePurge: Determined by ST7800 Purge Timer Card

PostPurge: 15 sec

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 13 oz (0.8kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Control Safety Devices: Acceptable: CSD-1.

Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Interlocks	Pilot Type	Second Stage Pilot Valve	Comments
				Main	Pilot				
RM7840E1016	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or 15 sec	4 sec or 10 sec	Lockout	interrupted	interrupted	LHL-LF/HF Proven, Energy Saving Purge
RM7840G1014	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec, 15 sec, 30 sec or Intermittent	4 sec or 10 sec	Running	interrupted	selectable	LHL-LF Proven
RM7840L1018	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or 15 sec	4 sec or 10 sec	Lockout	interrupted	interrupted	LHL-LF/HF Proven
RM7840L1026	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec, or 15 sec, or Intermittent	4 sec or 10 sec	Lockout	interrupted	Intermittent	LHL-LF/HF Proven
RM7840M1017	selectable	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec or Intermittent	4 sec or 10 sec	Running	interrupted	Intermittent	On/Off LF Proven

EC7885; RM7885 Manual Start industrial Primary Control



Microprocessor-based integrated burner control for industrial semi-automatically fired gas, oil, coal, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams

See Diagram on page 696

Ambient Temperature Rating-40 F to 140 F: (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 13 oz (0.8kg)

- Functions include flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Adaptable to continuous firing, high-low or modulating firing rate for semi-automatic burner sequencing.
- Operates with the following:
 - Torch-ignited main burner or torch-ignited pilot using S445A Start-Stop Station, or conventional knee or foot operated station.
 - Direct-ignition oil burner or electrically ignited pilot, using S445A Start-Stop Station.
- Five LEDs provide sequence information.
- Non-volatile memory.
- Flame signal check during standby.
- Shutter drive output.
- Compatible with existing Honeywell flame detectors.
- Terminal provided for external alarm to sound on flame failure.

Approvals:

Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier.

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period	Pilot Type	Description
			Pilot		
EC7885A1011	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	15 min	intermittent	Primary Control, Semi-Automatic
RM7885A1015	120 Vac (+10/-15%)	50/60 Hz (±10%)	15 min	intermittent	Primary Control, Semi-Automatic

7800 SERIES Relay Modules

RM7888 PLC Adaptable Primary Control



Microprocessor-based integrated burner control for industrial process semi-automatically fired gas, oil, coal, or combination fuels for single and multiple burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams

See diagram on page 696

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 10 oz (0.7kg)

Approvals:

Canadian Standards Association: Certified

- Functions include automatic burner startup sequencing, five user select-able run sequences, four line-voltage sequence control inputs, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Requires a relay module, subbase, and amplifier for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display mounting, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Use with master system control which determines purge timing and confirms air supply and air flow.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.

Factory Mutual: Approved.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier.

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Pilot Type	Comments	Description
			Main	Pilot			
RM7888A1019	120 Vac (+10/-15%)	50/60 Hz (±10%)	15 sec	4 sec or 10 sec	selectable	Selectable sequences	Primary Control, Semi-Automatic
RM7888A1027	120 Vac (+10/-15%)	50/60 Hz (±10%)	15 sec	4 sec or 10 sec	selectable	For 10 sec DSI applications, selectable sequences	Primary Control, Semi-Automatic

EC7890; RM7890 On-Off Primary Controls



Microprocessor-based integrated primary burner control for automatically fired gas, oil or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams

See diagram on page 696

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 1 lb 13 oz (0.8kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase and amplifier are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable relight or lockout on loss of flame.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier.

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

221729A Dust Cover for 7800 Relay Modules

221729A Dust Cover for 7800 Relay Modules

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period	Pilot Type	Comments
			Pilot		
EC7890A1011	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	—
EC7890A1029	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	CE Certified
EC7890B1010	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	Includes Shutter Drive Capability
EC7890B1028	220-240 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	Includes Shutter Drive Capability, CE Certified
RM7890A1015	120 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	—
RM7890A1031	120 Vac (+10/-15%)	50/60 Hz (±10%)	30 sec	intermittent	—
RM7890A1049	100 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	—
RM7890B1014	120 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec	intermittent	Includes Shutter Drive Capability
RM7890B1030	120 Vac (+10/-15%)	50/60 Hz (±10%)	4 sec or 10 sec, fixed	intermittent	Includes Shutter Drive Capability, Alarm sounds when Reset pushed.
RM7890C1005	120 Vac (+10/-15%)	50/60 Hz (±10%)	—	—	Standing Pilot Applications
RM7890D1004	120 Vac (+10/-15%)	50/60 Hz (±10%)	15 sec or 30 sec	intermittent	Higher Flame Sensor Voltage for Infra Red Heater Applications

7800 SERIES Relay Modules

EC7895A,C; RM7895 On-Off Primary Control with Prepurge



Microprocessor-based integrated primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams

See diagram on page 696

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Electrical Ratings, Power Supply (Hz): 50/60 Hz (±10%)

PrePurge: Determined by ST7800 Purge Timer Card

Vibration: 0.5 G environment

Weight (lb): 1 lb 15 oz (0.9kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier, and prepurge timer are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable relight or lockout on loss of flame.
- Airflow switch check.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Flame Establishing Period		Delayed Main Valve	Interlocks	Pilot Type	Comments
			Main	Pilot				
EC7895A1010	No	220-240 Vac (+10/-15%)	—	4 sec or 10 sec	No	selectable	intermittent	—
EC7895C1000	No	220-240 Vac (+10/-15%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	—
RM7895A1014	—	120 Vac (+10/-15%)	—	4 sec or 10 sec	No	selectable	intermittent	—
RM7895A1048	—	120 Vac (+10/-15%)	—	4 sec or 10 sec	No	selectable	intermittent	Includes ignition cut-out during PFEP
RM7895B1013	Dynamic	120 Vac (+10/-15%)	—	4 sec to 10 sec	No	selectable	intermittent	—
RM7895C1012	—	120 Vac (+10/-15%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	—
RM7895C1020	—	120 Vac (+10/-15%)	10 sec	10 sec	Yes	selectable	interrupted	Includes ignition cut-out during PFEP
RM7895D1011	Dynamic	120 Vac (+10/-15%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	—
RM7895E1002	—	120 Vac (+10/-15%)	—	15 sec or 30 sec	Yes	selectable	intermittent	Higher Flame Sensor Voltage for Infra Red Heater Applications
RM7895F1001	Dynamic	120 Vac (+10/-15%)	10 sec	15 sec or 30 sec	Yes	selectable	interrupted	Higher Flame Sensor Voltage for Infra Red Heater Applications

RM7896 On-Off Primary Control with Pre- and Post-Purge



Microprocessor-based integrated full-function primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

Dimension Diagrams

See diagram on page 696

PostPurge: 15 sec

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

PrePurge: Determined by ST7800 Purge Timer Card

Vibration: 0.5 G environment

Weight (lb): 1 lb 15 oz (0.9kg)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Factory Mutual: Approved: Report No. J.I.OX4A5.AF.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier and purge card are required for operation.
- Options include PC interface, keyboard display module, DATA CONTROLBUS™ MODULE, remote display module, first-out expanded annunciator, and COMBUSTION SYSTEM MANAGER™ software.
- 15 second postpurge.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable recycle or lockout on loss of airflow or flame.
- Shutter drive output.
- Airflow switch check.
- Delayed main valve.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Required Components: Q7800A,B Universal Wiring Subbases. R7847, R7848, R7849, R7851, R7861, or R7886 Flame Signal Amplifier. ST7800 Plug-in Purge Timer Card.

Product Number	AirFlow Check	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Flame Establishing Period		Delayed Main Valve	Interlocks	Pilot Type	Comments
				Main	Pilot				
RM7896A1012	—	120 Vac (+10/-15%)	50/60 Hz (±10%)	—	4 sec or 10 sec	No	selectable	intermittent	Includes Pre- and Post -Purge.
RM7896B1011	Dynamic	120 Vac (+10/-15%)	50/60 Hz (±10%)	—	4 sec or 10 sec	No	selectable	intermittent	Includes Pre- and Post -Purge.
RM7896C1010	—	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	Includes Pre- and Post -Purge.
RM7896D1019	Dynamic	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	Includes Pre- and Post -Purge.
RM7896D1027	Dynamic	120 Vac (+10/-15%)	50/60 Hz (±10%)	10 sec	4 sec or 10 sec	Yes	selectable	interrupted	Includes Pre- and Post -Purge.

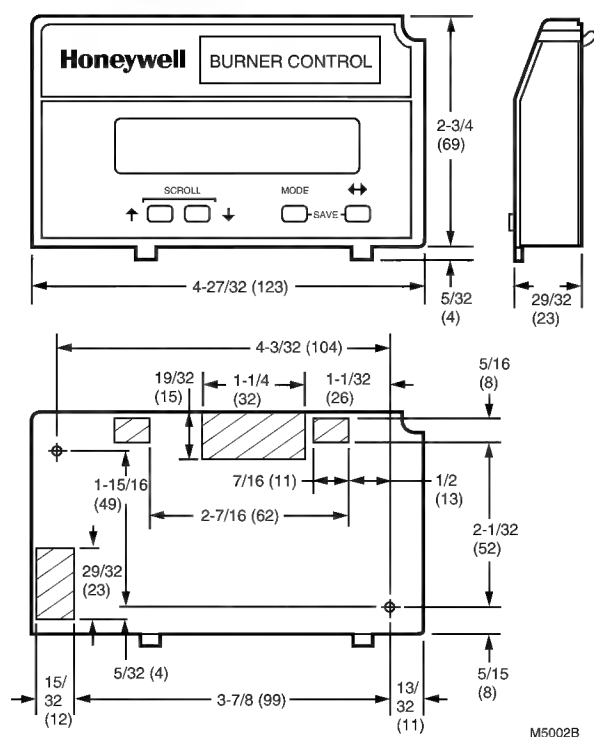
Display Modules

S7800 Keyboard Display Module



Provides current status of burner sequence, timing information, hold information and lockout information, as well as selectable or preemptive messages.

Dimension Diagrams



M5002B

- Application flexibility.
- Communication interface capability.
- Dependable, long-term operations provided by microcomputer technology.
- First-out annunciation and system diagnostics provided by 2 row by 20 column Vacuum Fluorescent Display (VFD).
- Local or remote annunciation of operation and fault information.
- First out expanded annunciation with 24 limit and interlock LEDs enhances keyboard display module information.
- Provides burner controller data.
- Remote reset.
- Report generation.

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 4 oz (113 g)

Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.

Factory Mutual: Approved: Report No. J.I.1V9AO.AF.

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

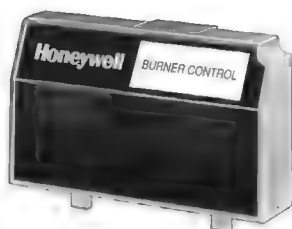
Accessories:

206311 Carrying Case for S7800 Display

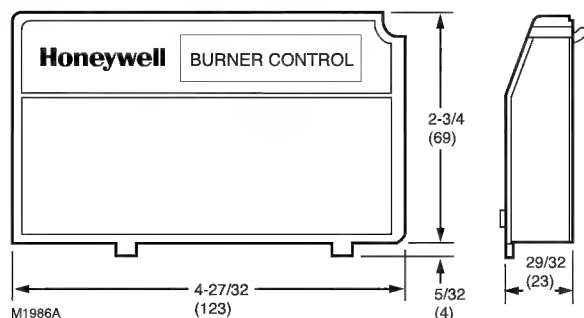
203541 Five (5) Wire Connector for S7800 Display

Product Number	Electrical Ratings, Power Supply (Vac)	Comments	Description
S7800A1001	13 Vdc peak fullwave rectified (+20/-15%).	English Language	Display Module
S7800A1035	13 Vdc peak fullwave rectified (+20/-15%).	French Language	Display Module
S7800A1043	13 Vdc peak fullwave rectified (+20/-15%).	German Language	Display Module
S7800A1050	13 Vdc peak fullwave rectified (+20/-15%).	Italian Language	Display Module
S7800A1068	13 Vdc peak fullwave rectified (+20/-15%).	Spanish Language	Display Module
S7800A1126	13 Vdc peak fullwave rectified (+20/-15%).	Portuguese Language	Display Module

S7810A Data ControlBus Module



Dimension Diagrams



Supports remote mounting of S7800 Keyboard Display Module, personal computer communications interface and remote reset.

- Use with remotely mounted S7800 Keyboard Display Module.
- Installs directly on the front of 7800 SERIES Relay Modules.
- Provides communications bus interface and remote reset.

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 4 oz (113 g)

Approvals:

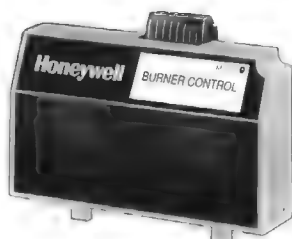
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Replacement Parts:

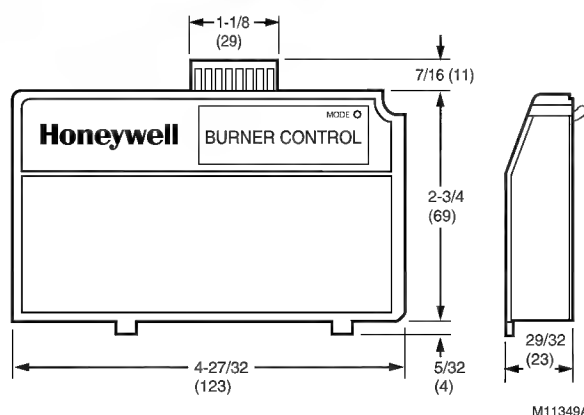
203541 Five (5) Wire Connector for S7800 Display

Product Number	Electrical Ratings, Power Supply (Vac)	Comments	Description
S7810A1009	13 Vdc peak fullwave rectified (+20/-15%).	Includes 203541 5-wire Connector	Data ControlBus(tm) Module

S7810B Multi-Drop Switch Module



Dimension Diagrams



Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)

Vibration: 0.5 G environment

Weight (lb): 4 oz (113 g)

Approvals:

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Product Number	Electrical Ratings, Power Supply (Vac)	Comments	Description
S7810B1007	13 Vdc peak fullwave rectified (+20/-15%).	Includes 203541 5-wire Connector	Dedicated Datalink Module (DDL)

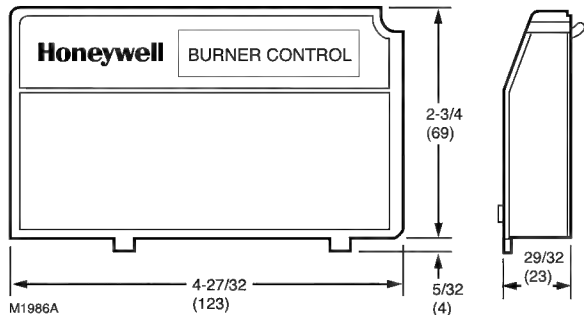
Display Modules

S7810M ModBus Module

Supports remote mounting of a Keyboard Display Module, personal computer PLC interface for multi-dropped 7800 SERIES subnetworks, and remote reset.

- Multi-dropped communications bus interface.
- Remote reset.
- Ability to remotely mount a Keyboard Display Module.

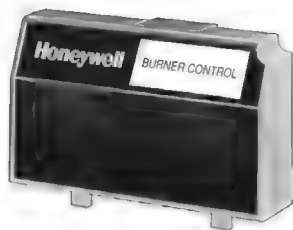
Dimension Diagrams



Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)
Vibration: 0.5 G environment
Weight (lb): 4 oz (113 g)
Approvals:
Canadian Standards Association: Certified, File No. LR95329-3.
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Product Number	Electrical Ratings, Power Supply (Vac)	Comments	Description
S7810M1003	13 Vdc peak fullwave rectified (+20/-15%).	Includes 208727 8 pin electrical connector	Modbus Module
S7810M1029	13 Vdc peak fullwave rectified (+20/-15%).	Includes 208727 8 pin electrical connector	ControlBus(tm) Module-MODBUS - CE Certified

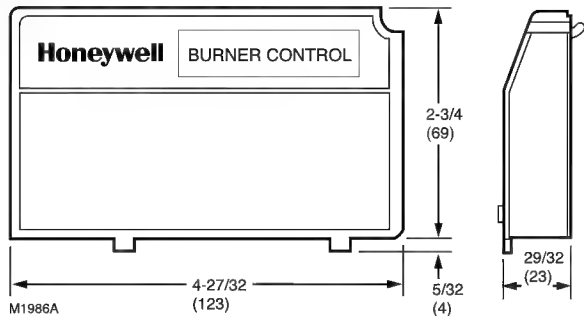
S7820 Remote Reset Module



Serves as link between remote reset pushbutton and relay module. Allows 7800 SERIES relay module to be reset from a remote location.

- Reset button can be installed up to 1000 feet away.
- Installs directly on the front of 7800 SERIES relay module.

Dimension Diagrams



Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)
Vibration: 0.5 G environment
Weight (lb): 3 oz (113 g)
Approvals:
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ.

Product Number	Comments	Description
S7820A1007	Includes 203541 5-wire Connector	Remote Reset Module

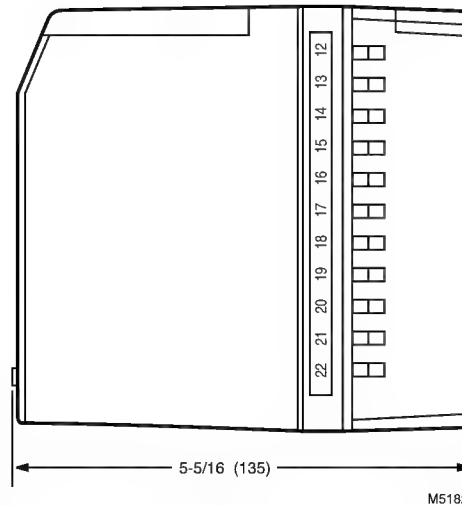
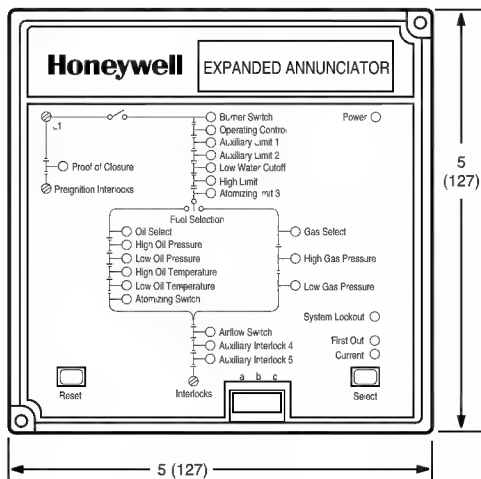
S7830 First Out Expanded Annunciator



Microprocessor-based expanded annunciator to support the 7800 SERIES relay modules for first-out annunciation, sequencing, system or self-diagnostics and troubleshooting.

- Twenty-six status LEDs.
- Front panel LED array—arranged to indicate flow of line-voltage through string of limits, controls and interlocks.
- Selectable current and first-out LED array display status.
- Twenty-one monitored contact points.
- Access for external electrical voltage checks.

Dimension Diagrams



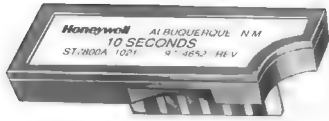
Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)
Vibration: 0.5 G environment
Weight (lb): 1 lb. 6oz (0.6k)
Approvals:
Canadian Standards Association: Certified, File No. LR95329.

FCC Emissions: FCC Part 15, Class B, Emissions.
Industrial Risk Insurers: IRI Acceptable.
Underwriters Laboratories, Inc: File No. MH17367; Guide No. MJAT.
Required Components: 7800 SERIES Relay Modules and Q7800A, B Subbases

Product Number	Electrical Ratings, Power Supply (Vac)	Electrical Ratings, Power Supply (Hz)	Description
S7830A1005	120 Vac (+10/-15%)	50/60 Hz (±10%)	Expanded Annunciator

Purge Timers

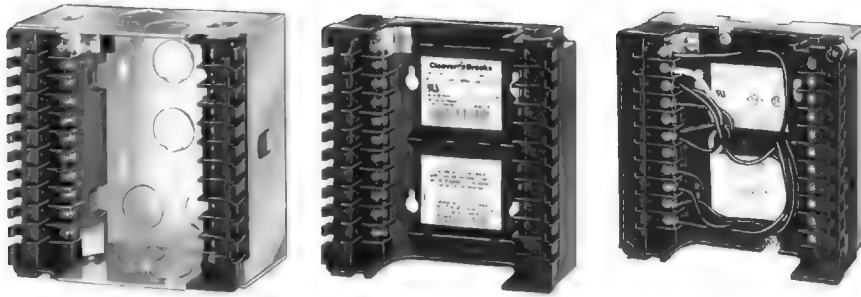
ST7800 Plug In Purge Timer



Provides the prepurge timing for select 7800 SERIES relay modules. ST7800C used with the RM7838C only.

Product Number	PrePurge	Description
ST7800A1005	2 seconds	Purge Timer Card
ST7800A1013	7 seconds	Purge Timer Card
ST7800A1021	10 seconds	Purge Timer Card
ST7800A1039	30 seconds	Purge Timer Card
ST7800A1047	40 seconds	Purge Timer Card
ST7800A1054	60 seconds	Purge Timer Card
ST7800A1062	90 seconds	Purge Timer Card
ST7800A1070	2.5 minutes	Purge Timer Card
ST7800A1088	4.0 Minutes	Purge Timer Card
ST7800A1096	6.0 minutes	Purge Timer Card
ST7800A1104	9.0 minutes	Purge Timer Card
ST7800A1112	12.0 minutes	Purge Timer Card
ST7800A1120	15.0 minutes	Purge Timer Card
ST7800A1138	22.0 minutes	Purge Timer Card
ST7800A1146	30.0 minutes	Purge Timer Card
ST7800C1003	7 seconds	Purge Timer Card
ST7800C1011	20 seconds	Purge Timer Card
ST7800C1029	4.0 Minutes	Purge Timer Card
ST7800C1037	6.0 minutes	Purge Timer Card
ST7800C1045	8.0 minutes	Purge Timer Card
ST7800C1052	10.0 minutes	Purge Timer Card
ST7800C1060	12.0 minutes	Purge Timer Card
ST7800C1078	14.0 minutes	Purge Timer Card
ST7800C1086	16.0 minutes	Purge Timer Card
ST7800C1094	18.0 minutes	Purge Timer Card
ST7800C1102	20.0 minutes	Purge Timer Card
ST7800C1110	22.0 minutes	Purge Timer Card
ST7800C1128	24.0 minutes	Purge Timer Card
ST7800C1136	30.0 minutes	Purge Timer Card
ST7800C1144	45.0 minutes	Purge Timer Card

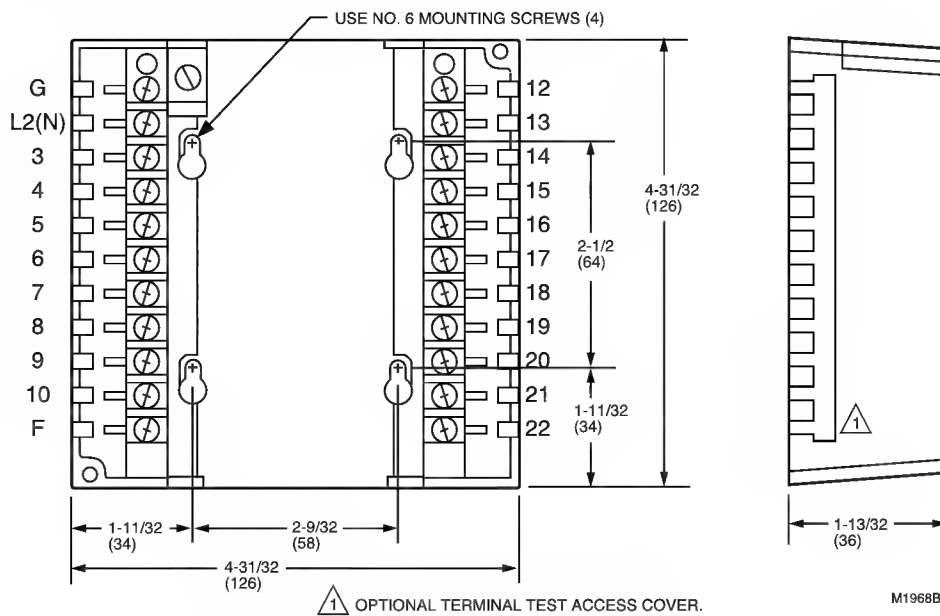
Q7800 22 Terminal Universal Wiring Subbases



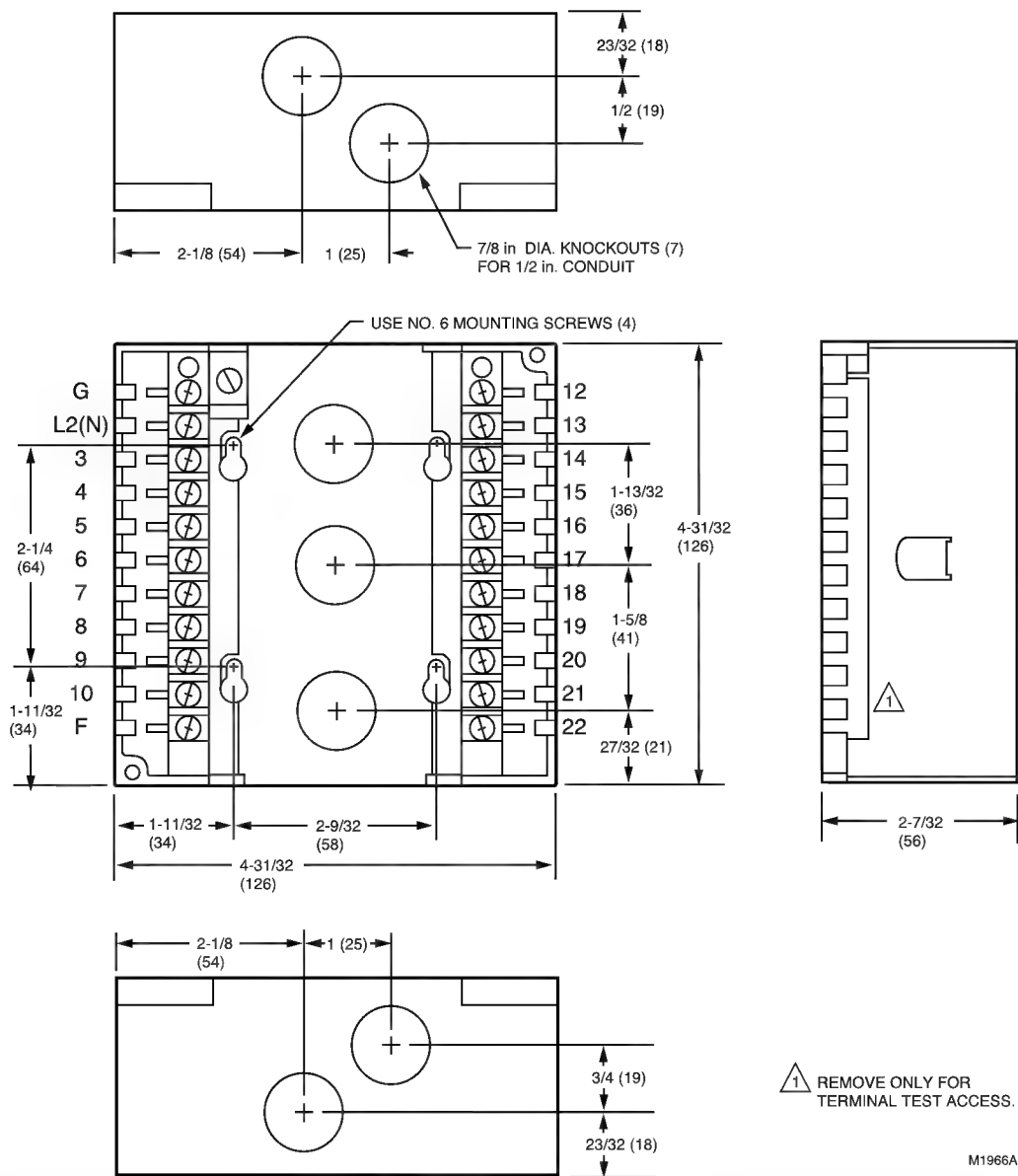
Burner, panel or wall mount subbases for 7800 SERIES relay modules and S7830A Expanded Annunciator.

- Makes electrical connections for 7800 SERIES relay modules or S7830A Expanded Annunciator through bifurcated contacts.
- Provides terminals for field wiring.
- Twenty-two terminals.

Dimension Diagrams



Wiring Subbase



REMOVE ONLY FOR
TERMINAL TEST ACCESS.

M1966A

Ambient Temperature Rating: -40 F to 140 F (-40 C to 60 C)
Vibration: 0.5 G environment
Weight (lb): 7 oz (200g)
Approvals:

Canadian Standards Association: Certified, File No. LR95329-3.
Underwriters Laboratories, Inc: Component Recognized, File No. MP268; Guide No. MCCZ2.

Product Number	Description
Q7800A1005	Panel mount
Q7800B1003	Burner/wall mount 2 knockouts each end
Q7800B1011	Burner/wall mount 3 knockouts each end
Q7800F1004	Burner/wall mount adapter subbase for RA890
Q7800F1012	Burner/wall mount adapter subbase for R4795

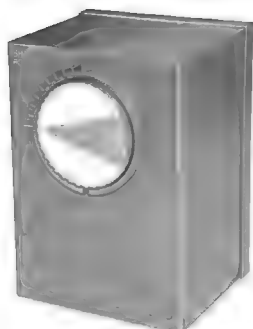
7800 Series Accessories or Parts

OS Number	Description	Used With
120934	Mounting Flange for CR7890 Burner Control	CR7890
203541	Five (5) Wire Connector for S7800 Display	S7800
203765	Remote Mounting Bracket for S7800 Display	S7800
203968A	Plug-In Power Supply (13Vdc) for remote mounting S7800 Display	S7800
204718A	Nema 4 Cover Assembly for Mounting S7800 Display	S7800
204718B	Nema 1 Cover Assembly for Mounting S7800 Display	S7800
204718C	Nema 4 Cover Assembly with Reset Button for Mounting S7800 Display	S7800
205321B	Mounting Bracket - Flush Mounting the S7800 Display	S7800
206311	Carrying Case for S7800 Display	S7800
221729A	Dust Cover for 7800 Relay Modules	7800 Relay Modules
221779	Terminal Slot Cover for Q7800	Q7800
221818A	Display Extension Cable - 60 inches for S7800 Display	S7800
221818C	Display Extension Cable - 10 foot for S7800 Display	S7800
32005580-001	Cable for connecting Keyboard Display Module (KDM) to CR7890	CR7890
32006648-001	Nema I Cover for CR7890B	CR7890
32007181-001	Wiring Harness with 9-pin Brad Harrison® to CR7890	CR7890

ControlLinks™ Fuel Air Control System

NOTE: THESE PRODUCTS ARE AVAILABLE ONLY THROUGH AUTHORIZED CONTROLINKS™ REPRESENTATIVES.

ML7999A Universal Parallel-Positioning Actuator



- Password protected with an eight-digit hexadecimal identification signal.
- Separate wiring compartment between line voltage power wiring and low voltage control.
- Couples directly to a 1/2 in. (13 mm) shaft with no additional parts required.
- Couples directly to 5/16 in. (8 mm) and 3/8 in. (9 mm) shafts using available self-centering shaft reduction accessories.
- Shaft coupler assembly available for shafts larger than 1/2 in.
- Bracket Accessory Kit available for mounting to Honeywell V51 Butterfly Gas Valves.
- NEMA 2
- IP54 with weatherproof kit (see Accessories)

Provides 100 lb-in. torque, pulse-width-modulating (PWM) control of combustion air dampers, butterfly gas valves, oil modulation valves, and flue gas recirculation systems. The actuator includes a precision feedback potentiometer and integral power supply. The ML7999A Actuator is part of the ControlLinks™ Fuel Air Control System, and must be used with the R7999 Fuel Air Controller.

Electrical Ratings:

Power Input: 100 to 240 Vac (+10/-15%), 50/60 Hz; Maximum Power Consumption: 15 VA.

Temperature Rating (Ambient): -40 F to +140 F; -40 C to +60 C.

Temperature Rating (Storage): -40 F to +150 F; -40 C to +65 C.

Humidity Range at 95 F (35 C): 5 to 95% RH, noncondensing.

Vibration: 0.0 to 0.5g continuous (V2 level).

Control Signal (at 5 mA current): Drive Clockwise: Minimum 4.25 Vdc differential between DR1-DR2; Drive Counterclockwise:

Maximum

-4.25 Vdc differential between DR1-DR2.

NOTE: Actuator does not respond until the 8-digit ID signal from the R7999 is passed via DR1-DR2.

Actuator Stroke: 95° nominal $\pm 3^\circ$, mechanically limited.

Output Hub Position Accuracy: $\pm 0.1^\circ$.

Torque Ratings at Rated Voltages: Lift and Hold Minimum: 100 lb-in. (11.3 Nm); Breakaway Minimum: 100 lb-in. (11.3 Nm); Stall

Minimum: 100 lb-in. (11.3 Nm); Stall Maximum: 150 lb-in. (17 Nm).

Actuator Design Life (at 100 lb-in.): Full-Stroke Cycles: 100,000 minimum; repositions: 2,000,000 minimum.

Feedback Potentiometer: Total Resistance: 5000 ohms $\pm 10\%$.

Actuator Timing (90° Travel): **Standard:** 24 to 30 seconds; Derated Cold-Start Timing (from -40 F to -20 F (-40 C to -29 C), 150 seconds maximum.

Noise Rating: 55 dBA maximum at 1m during normal operation.

Mounting: Mounts directly on 1/2 in. (13 mm) round or square shaft.

With proper accessories, mounts to 5/16 in. and 3/8 in. (8 mm, 10 mm) round or square shafts; 9/16 in., 5/8 in., and 3/4 in. (14 mm, 16 mm, and 19 mm) round shafts.

Position Indicator: Visible with cover on device.

Approvals: Underwriters Laboratories Inc. (UL); meets UL873; Canadian Standards Association (CSA); European Community (CE);

Accessories:

201391 Shaft Adapter for 3/8 in. round or square shaft;

32002935-001 ML7999 Weatherproof Kit

32003167-001 Shaft Adapter for 5/16 in. round or square shaft

32003168-001 Shaft Adapter for 3/4 in. diameter round shaft

32003168-002 Shaft Adapter for 5/8 in. diameter round shaft

32003168-003 Shaft Adapter for 9/16 in. diameter round shaft

32003396-001 V51 Mounting Bracket for 1-1/2 in. and 2 in. valves

32003396-002 V51 Mounting Bracket for 2-1/2 in., 3 in. and 4 in. valves.

Product Number	Description
ML7999A1003	Universal Parallel-Positioning Actuator. Medium torque electronic actuator with a precision feedback potentiometer and integral power supply capable of direct line voltage connection.

R7999A ControlLinks™ Fuel Air Controller



Uses the latest microprocessor-based technology to simultaneously control up to four actuators. When used with the ML7999 Universal Parallel Positioning Actuators, represents a value-added replacement of mechanical cam and linkage assembly controlling the relationship between fuel, airflow and flue gas recirculation (if used) on a power burner. The ControlLinks Fuel Air Control System consists of the R7999 Fuel Air Controller, Q7999 Wiring Subbase, ML7999 Universal Parallel Positioning Actuator and ZM7999 Configuration Software.

Description: Fuel Air Controller, consisting of a four-channel actuator drive Input/Output (I/O) and hardware interface for a variety of burner controllers.

Temperature Rating (Ambient): -40 F to +140 F; -40 C to +60 C.

Temperature Rating (Storage): -40 F to +150 F; -40 C to +65 C.

Humidity Range: 5 to 95% RH, noncondensing.

Electrical Ratings: (Input Power): 100 to 120 Vac (+10/-15%), 50/60 Hz (± 10%), 10VA maximum.

The R7999, with one communications port, provides communications capabilities similar to those found in the 7800 SERIES controls.

- Fast burner setup via PC or laptop.
- Fuel, air, FGR profile download capability.
- Two independent fuel profiles with or without FGR.
- 7 to 24 point profiles.
- Programmable behaviors of all actuators during Purge and Standby.
- Programmable behavior of nonselected fuel actuator.
- Independent lightoff and minimum modulation positions.
- Wide power voltage input range (100 to 120 Vac, 50/60 Hz).
- Auto/Manual input.
- Manual mode firing rate input.
- Pluggable controller to wiring subbase.
- Multipurpose communications port.
- Field-configurable device.
- Integrated boiler shock protection algorithms:
- Water temperature low fire hold.
- Stack temperature low fire hold.
- FGR and low fire hold.
- Selectable FGR hold based on stack temperature.
- Programmable behavior of FGR actuator during purge.
- Maximum modulation limit capability.
- Remote reset input.
- Automated actuator endpoint seeking process.
- CSD-1 and NFPA acceptable.

Vibration: 0.0 to 0.5g continuous (V2 level).

Mounting: Mounts on Q7999 Wiring Subbase.

Approvals:

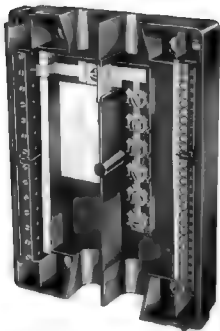
Underwriters Laboratories Inc (UL) : Listed, Report No. MH17367

Accessories:

32002515-001 Three-Pin Electrical Connector.

Product Number	Description
R7999A1005	Fuel Air Ratio Controller, 100 to 120 Vac, 50/60 Hz.

Q7999A ControlLinks™ Fuel Air Control Wiring Subbase



Provides terminals for field wiring for the R7999A ControlLinks Fuel Air Controller. Terminals on the R7999A,B Controller engage the Q7999 contacts to make electrical connections.

The Q7999A Subbase is panel-mounted.

- Quick-mount wiring subbase for R7999A,B Fuel Air Ratio Controllers.
- Allows wiring of control system before installation of controller.
- Panel-mounted.
- NEMA 1 enclosure.

Weight: 10 oz; 0.28 kg.

Enclosure: NEMA 1.

Approvals:

Underwriters Laboratories Inc: Listed, Report No. MH17367

Product Number	Description
Q7999A1006	Fuel Air Ratio Controller Wiring Subbase

ControlLinks™ Fuel Air Control System

ZM7999A ControlLinks™ Fuel Air Control System Configuration Software

The ZM7999 Software Configuration Tool reduces burner setup time by letting you create a burner modulation curve (profile) for the burner that allows for safe and efficient operation at all points along the modulation curve. The software uses a wizard-like process to assist you through the commissioning process. It also lets you save curves in standard PC files so that you can commission similar systems rapidly and safely. Once the burner is commissioned, real-time monitoring of the system can be done via the monitoring tool.

Minimum Hardware Requirements:

- PC or laptop with a Pentium® processor.
- Windows® 95 or Windows 98.
- 16 MB of RAM.
- 1G hard drive with 100 MB of free memory.
- 4X (or higher) CD-ROM drive.
- Mouse.
- Super VGA color monitor (800 x 600 resolution suggested).

Product Number	Description
ZM7999A1006	Configuration Software

S7999 ControlLinks™ Display Module



The S7999 ControlLinks Display module (DM) provides local or remote annunciation of system operation, fault information, diagnostic information, actuator settings and configuration settings of the ControlLinks system.

- Communication interface capability to the ControlLinks system.
- Dependable, long-term operation provided by microcomputer technology.
- Local or remote system annunciation provided by a 2-row by 20-column display.
- Operating Status:
 - Source of demand/control.
 - Actuator positions.
 - Hold status.
 - Total cycles.
 - Total hours of operation.
 - Run time.
- Fault history of six most recent faults.
 - Fault code.
 - Fault message.
 - Cycles at time of fault.

- Diagnostic information:
 - Input/Output status.
 - Demand/control input and position.
 - Fuel selection.
 - Fuel position.
- Motor settings:
 - Light-off position of fuel, air and FGR.
 - purge position of fuel, air and FGR.
 - Programmed stop position of fuel, air and FGR.
- Configuration settings:
 - Low Fire Hold input (XmA).
 - FGR Purge position.
 - Manual potentiometer limit enabled/disabled.
 - R7999 hardware/software revision.
 - Display Module (DM) software revision.

Dimensions: 4 27/32 in. wide, 2 29/32 in. high, 29/32 in. deep;
123 mm wide, 73 mm high, 23 mm deep.

Electrical Ratings, Power Supply: 13 Vdc peak full wave rectified (+20/-15%).

Humidity Ratings: 85% RH continuous, non-condensing

Vibration: 0.5 G environment

Weight: 4 oz (113 g)

Temperature Rating (Ambient): -40 F to 140 F; -40 C to 60 C.

Approvals,

FCC Emissions: FCC Part 15, Class B, Emissions.

Industrial Risk Insurers: IRI Acceptable.

Underwriters Laboratories, Inc: Component Recognized.

Accessories:

206311 Carrying Case for S7800 Display

Product Number	Comments	Description
S7999A1002	English Language	Display Module

A7999 ControlLinks™ Portable Combustion Analyzer



The portable Combustion Analyzer (PCA) is a commercial grade, hand held, combustion efficiency analyzer that is designed for continuous (on demand) sampling of light industrial and residential furnaces, appliances, and boilers. The basic instrument is supplied with a probe, instruction manual, batteries, and carrying case.

Product Number	Description
A7999A1003	Portable Combustion Analyzer

DSP3548 ControlLinks Configuration Tool Kit

The ControlLinks Configuration tool Kit is an accessory for the commissioning of ControlLinks systems. The tool kit consists of the following:

- Carrying Case
- Configuration Software, ZM7999A1006
- RS232-RS485 converter
- RS232 cable

Product Number	Description
DSP3548	Support tool kit for ControlLinks system commissioning

Flame Amplifiers

R7247; R7248; R7249; R7476 Flame Amplifiers



Solid state plug-in units respond to flame detector signal and indicate presence of flame.

- Use with BC7000; R4140; R4075C,D,E; R4138C,D Flame Safeguard controls and appropriate flame detector and FSP5075A1, FSP5075A3 Flame Amplifier Modules.

Type: Flame Amplifier

Humidity Rating (%RH): 5 to 90% RH

Vibration: 0.5 G continuous

Weight: 8 oz. (227 g)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2

Control Safety Devices: Acceptable (CSD-1)

Factory Mutual: Approved: Report No. 24181.01

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ2

Product Number	Flame Failure Response Time	Self Checking?	Temperature Rating (Operating Range)		Use with Flame Sensor	Use with Primary Control	Comments
			(F)	(C)			
R7247A1005	2 to 4 sec	None (standard)	-40 F to 145 F	-40 C to 63 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C— Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Green
R7247A1021	1 sec max	None (standard)	-40 F to 145 F	-40 C to 63 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C— Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Green
R7247B1003	2 to 4 sec	AMPLI-CHECK	-40 F to 150 F	-40 C to 66 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C— Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Green
R7247C1001	2 to 4 sec	Dynamic Self-Check	-40 F to 150 F	-40 C to 66 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012E, F	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Green
R7248A1004	2 to 4 sec	None (standard)	-40 F to 145 F	-40 C to 63 C	Gas, oil, coal: Infrared (lead sulfide) C7015	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Red
R7248B1028	2 to 4 sec	AMPLI-CHECK	-40 F to 145 F	-40 C to 63 C	Gas, oil, coal: Infrared (lead sulfide) C7015	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Red
R7249A1003	2 to 4 sec	None (standard)	-40 F to 145 F	-40 C to 63 C	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Purple
R7476A1007	2 to 4 sec	None (standard)	-40 F to 150 F	-40 C to 66 C	Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Blue
R7476A1015	2 sec max.	Dynamic Self-Check	-40 F to 150 F	-40 C to 66 C	Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076	R4140, BC7000, R4075C, D, E, R4138C, D, FSP5075	Color: Blue

R7824; R7847; R7848; R7849; R7851; R7861; R7886 Flame Signal Amplifiers



Type: Flame Amplifier

Dimensions, Approximate: 3 9/16 in. wide, 3 3/8 in. high, 7/8 in. deep.
(91 mm wide, 85 mm high, 23 mm deep.)

Humidity Rating (%RH): 85% RH continuous, non-condensing

Vibration: 0.5 G continuous

Weight: 2.5 oz. (71g)

Approvals:

Canadian Standards Association: Certified: File No. LR95329-3

Solid state plug-in amplifiers that respond to flame detector inputs to indicate the presence of flame when used with 7800 SERIES relay modules.

- Flame failure response time of 2.0 or 3.0 seconds.
- Flame signal strength ranges from 0.0 to 5.0 Vdc.
- Plug into 7800 relay module through printed circuit board edge connector keyed for proper orientation.
- Flame signal test jacks to measure amplifier flame signal voltage.
- Color-coded labels identify flame detection type:
- Blue—pulsed rectification.
- Dynamic Self-Check Amplifier test the detectors and all electronic components in the flame detection system; 7800 SERIES relay module locks out on safety shutdown with flame detection system failure.
- Compatible with existing Honeywell flame detectors (order separately).

Factory Mutual: Approved: Report No. J.I.1V9A0.AF

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

Product Number	Flame Failure Response Time	Self Checking?	Temperature Rating (Operating Range)		Use with Flame Sensor	Use with Primary Control	Comments
			(F)	(C)			
R7824C1002	3.0 sec	Dynamic Self-Check	-40 F to 140 F	-40 C to 60 C	C7024E, F Flame Detector	RM7824	Color: Green
R7847A1025	0.8 sec, 1.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	7800 SERIES Relay Modules	Color: Green
R7847A1033	2.0 sec, 3.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	7800 SERIES Relay Modules	Color: Green
R7847A1074	0.8 sec, 1.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179 Leadwire Run >50'	7800 SERIES Relay Modules	Color: Green
R7847A1082	2.0 sec, 3.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179 Leadwire Run >50'	7800 SERIES Relay Modules	Color: Green
R7847B1023	0.8 sec, 1.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	7800 SERIES Relay Modules	Color: Green
R7847B1031	2.0 sec, 3.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	7800 SERIES Relay Modules	Color: Green
R7847B1064	0.8 sec, 1.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179 Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179 Leadwire Run >50'	7800 SERIES Relay Modules	Color: Green
R7847B1072	2.0 sec, 3.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179 Leadwire Run >50'	7800 SERIES Relay Modules	Color: Green
R7847C1005	2.0 sec, 3.0 sec	Dynamic Self-Check	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012E, F	7800 SERIES Relay Modules	Color: Green
R7848A1008	2.0 sec, 3.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Infrared (lead sulfide) C7015	7800 SERIES Relay Modules	Color: Red

Flame Amplifiers

Product Number	Flame Failure Response Time	Self Checking?	Temperature Rating (Operating Range)		Use with Flame Sensor	Use with Primary Control	Comments
			(F)	(C)			
R7848B1006	2.0 sec, 3.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Infrared (lead sulfide) C7015	7800 SERIES Relay Modules	Color: Red
R7849A1015	0.8 sec, 1.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas, Oil: Minipeeper C7027A, C7035A, C7044	7800 SERIES Relay Modules	Color: Purple
R7849A1023	2.0 sec, 3.0 sec	None (standard)	-40 F to 140 F	-40 C to 60 C	Gas, Oil: Minipeeper C7027A, C7035A, C7044	7800 SERIES Relay Modules	Color: Purple
R7849B1013	0.8 sec, 1.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, Oil: Minipeeper C7027A, C7035A, C7044	7800 SERIES Relay Modules	Color: Purple
R7849B1021	2.0 sec, 3.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, Oil: Minipeeper C7027A, C7035A, C7044	7800 SERIES Relay Modules	Color: Purple
R7851B1000	2.0 sec, 3.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Optical (UV, IR, Visible light) C7927, C7935, C7915, C7962	7800 SERIES Relay Modules	Color: White
R7851B1018	0.8 sec, 1.0 sec	AMPLI-CHECK	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Optical (UV, IR, Visible light) C7927, C7935, C7915, C7962	7800 SERIES Relay Modules	Color: White
R7861A1026	2.0 sec, 3.0 sec	Dynamic Self-Check	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7061	7800 SERIES Relay Modules	Color: Purple
R7861A1034	0.8 sec, 1.0 sec	Dynamic Self-Check	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Ultraviolet Flame Sensor C7061	7800 SERIES Relay Modules	Color: Purple
R7886A1001	2.0 sec, 3.0 sec	Dynamic Self-Check	-40 F to 140 F	-40 C to 60 C	Gas, oil, coal: Adjustable Sensitivity Ultraviolet Flame Sensor C7076	7800 SERIES Relay Modules	Color: Blue

R7257; R7258; R7259 Flame Safeguard Amplifiers

Solid state, plug-in units allow use of rectification, infrared and ultraviolet flame detections. Use with Q518, Q519 and W688A Flame Safeguard multiburner modules and appropriate flame detector.

Type: Flame Amplifier

Approvals:

Canadian Standards Association: Listed: File No. LR1620-231

Product Number	Flame Failure Response Time	Self Checking?	Use with Flame Sensor	Use with Primary Control	Comments
R7257A1028	3.0 sec	None (standard)	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	Q518, Q519, W688A	Color: Green
R7258A1001	3.0 sec	None (standard)	Gas, oil, coal: Infrared (lead sulfide) C7015	Q518, Q519, W688A	Color: Red
R7259A1000	3.0 sec	None (standard)	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	Q518, Q519, W688A	Color: Purple

R7289, R7290 Flame Safeguard Amplifiers

Solid state, plug-in units allow use of rectification or ultraviolet flame detection. Use with R4795A,D Flame Safeguard primary controls and appropriate flame detector.

Approvals:

Factory Mutual: Approved: Report No. 19608.1

Underwriters Laboratories, Inc: Listed: File No. 268, Vol 7, Sec. 2

Type: Flame Amplifier

Product Number	Flame Failure Response Time	Self Checking?	Temperature Rating (Operating Range)		Use with Flame Sensor	Use with Primary Control	Comments
			(F)	(C)			
R7289A1004	3.0 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4795A, D	Color: Green
R7289A1012	0.8 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4795A, D	Color: Green
R7289A1020	3.0 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet Flame Sensor C7012A, C Gas: Rectifying Flame Rods C7004, C7007, C7005, C7008, C7009, Q179	R4795A, D	Color: Green
R7290A1001	3.0 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4795A, D	Color: Purple
R7290A1019	0.8 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4795A, D	Color: Purple
R7290A1027	3.0 sec	None (standard)	-40 F to +125 F	-40 C to +52 C	Gas, oil, coal: Ultraviolet (Minipeeper) C7027, C7035	R4795A, D	Color: Purple

Flame Amplifier Parts

Product Number	Description	Used With
32005301-001	T Filter for Rectification Amplifiers	R7847

Flame Detectors

C7007 Flame Rod Holder



Application: Gas fired pilot or gas fired system.

Type: Flame Rod

Dimensions, Approximate: 1 15/16 in. high, 2 3/16 in. diameter, 3 3/16 in. long (49 mm high, 56 mm diameter, 81 mm long)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2

Used to apply flame rod in gas-fired system controlled by recitification type flame safeguard control.

- Use with pressurized fire boxes. Hold flame rods firmly over the pilot or burner with a chuck and setscrew arrangement.
- Provide electrical connection through a terminal screw.
- Allow ventilation to cool the unit or to minimize soot deposit through a 1/2 in. NPT tapping.
- Mount easily with sleeve or thread type mounting adapters, and a straight or angle body.

Factory Mutual: Approved: Report No. 24181.03

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Mounting Method	Required Parts	Comments	Used With
C7007A1001	Terminal screw	1/2 in. NPT	102709E (48 in., 1219 mm) 102709D (36 in., 914 mm) 102709C (24 in., 610 mm) 102709B (18 in., 457 mm) 102709A (12 in., 305 mm)	Holder only, order Kanthal flame rod separately.	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289

C7008 Flame Rod Holder



Application: Gas fired pilot or gas fired system.

Type: Flame Rod

Dimensions, Approximate: Holder: 7/8 in. diameter, 3 3/4 in. long (Holder: 22 mm diameter, 95 mm long)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2

Miniature "spark plug" type flame rod holder with threaded base, snap-on cover and Kanthal A-1 Flame Rod.

- Use with Honeywell Flame Safeguard controls requiring rectification-type flame detection.
- Use only with gas.
- Install with or without cover.
- Available with a cover that has a right-angle leadwire take-off.
- Comes in several different lengths and can be cut to exact desired length.
- Uses Rajah electrical connector.

Factory Mutual: Approved: Report No. 24181.03

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Mounting Method	Required Parts	Comments	Used With	Includes
C7008A1174	Rajah electrical connector	1/4 in. NPT male.	105478D (24 in., 610 mm) 105478C (18 in., 457 mm) 105478B (12 in., 305 mm) 105478A (6 in., 152 mm)	Straight through pattern, 12 in. insertion. Order Flame Rod Separately	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289	Flame rod holder
C7008A1182	Rajah electrical connector	1/4 in. NPT male.	105478D (24 in., 610 mm) 105478C (18 in., 457 mm) 105478B (12 in., 305 mm) 105478A (6 in., 152 mm)	Straight through pattern, 24 in. insertion. Order Flame Rod Separately	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289	Flame rod holder

C7009 Flame Rod Holder



Subminiature "spark plug" type flame rod holder with flame rod.

- Use on industrial flame-retention gas burner nozzles.
- Works with Honeywell Flame Safeguard controls requiring rectification type flame detector.
- Mounts in areas with limited space because flame rod can be cut to desired length.
- Uses Rajah electrical connector.

Application: Gas fired pilot or gas fired system.

Type: Flame Rod

Dimensions, Approximate: (Holder: 10 mm diameter, 60 mm long)

Holder: 3/8 in. diameter, 2 3/8 in. long

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2

Factory Mutual: Approved: Report No. 24181.03

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

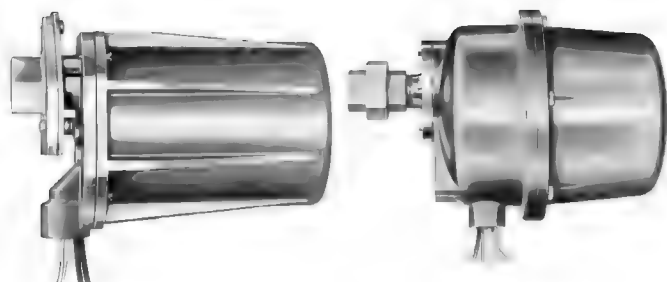
Product Number	Electrical Connections	Mounting Method	Comments	Used With	Includes
C7009A1009	Rajah electrical connector	1/8 in. NPT male	4 in. (102 mm) flame rod	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289	Flame rod and holder
C7009A1025	Rajah electrical connector	1/8 in. NPT male	12 in. (305 mm) flame rod	Flame Amplifiers: R7247A, B, R7847A, B, R7257, R7289	Flame rod and holder

Flame Rod Detector Accessories or Parts

OS Number	Description	Used With
102709A	Kanthal Flame Rod - 12 in.	C7004B, C7007A, C7011A
102709B	Kanthal Flame Rod - 18 in.	C7004B, C7007A, C7011A
102709C	Kanthal Flame Rod - 24 in.	C7004B, C7007A, C7011A
102709D	Kanthal Flame Rod - 36 in.	C7004B, C7007A, C7011A
102709E	Kanthal Flame Rod - 48 in.	C7004B, C7007A, C7011A
105465	Insulator	C7007A
105478A	Kanthal Flame Rod - 6 in.	C7008
105478B	Kanthal Flame Rod - 12 in.	C7008
105478C	Kanthal Flame Rod - 18 in.	C7008
105478D	Kanthal Flame Rod - 24 in.	C7008
105644A	Kanthal Flame Rod 4 in. includes Electrical Terminal and Washer	C7009A
105644B	Kanthal Flame Rod 8 in. includes Electrical Terminal and Washer	C7009A
105644C	Kanthal Flame Rod 12 in. includes Electrical Terminal and Washer	C7009A

Flame Detectors

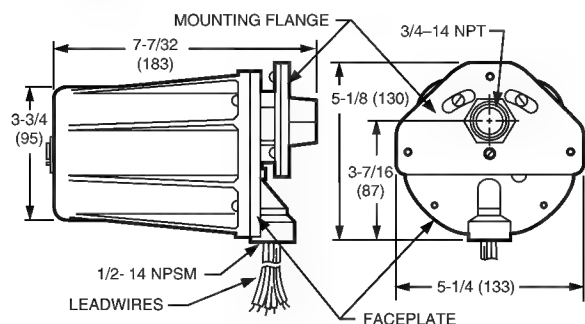
C7012 Solid State Purple Peeper® Ultraviolet Flame Detector



Solid state electronic flame detectors for use with Honeywell Flame Safeguard controls and amplifiers. Sense ultraviolet radiation produced by combustion of gas, oil, coal or other fuels.

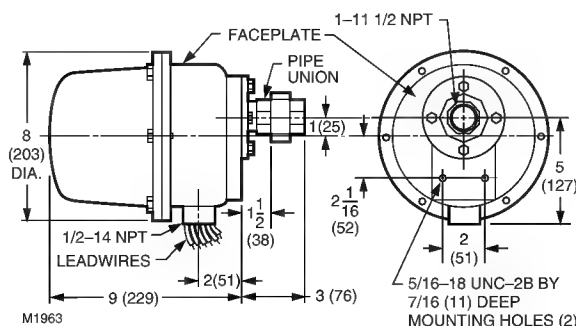
- Replace C7012 vacuum tube models.
- Mount horizontally, vertically or at any angle in between.
- Provide quick electrical hookup with threaded conduit fitting and color-coded leadwires.
- Reduced nuisance shutdowns by wiring two in parallel.

Dimension Diagrams



C7012A,C

M20275



M1963

Application: Gas fired burners
Oil fired burners
Coal fired burners

Type: Ultraviolet, Purple Peeper

Dimensions, Approximate: 5 1/4 in. diameter (includes mounting flange), 7 7/32 in. long (133 mm diameter (includes mounting flange), 183 mm long)

Electrical Ratings: 120 Vac

Frequency: 50 Hz, 60 Hz

Ambient Temperature Ratings: 25 F to 175 F (-4 C to 79 C)

Approvals:

Canadian Standards Association: Certified: Master Report LR95329-1

Factory Mutual: Approved: Report No. 14740.01

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Comments	Used With
		(inch)	(mm)				
C7012A1145	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012A1152	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012A1160	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012A1186	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012A1194	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012C1042	4 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	Explosion Proof	Explosion-proof, two piece, violet, cast aluminum enclosure	Flame Amplifiers: R7247A, R7847A, R7257
C7012E1104	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1112	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1120	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1146	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1153	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Comments	Used With
		(inch)	(mm)				
C7012E1161	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1187	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1195	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1203	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012E1278	Brad Harrison type number 41310 connector	—	—	1 in. NPT	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7247C, R7847C, R7747C
C7012F1052	6 NEC Class 1 Color-coded leadwires.	8 ft.	2.4 m	1 in. NPT	Explosion Proof	Dynamic self-checking flame detector, explosion-proof, two piece, violet, cast aluminum enclosure	Flame Amplifiers: R7247C, R7847C, R7747C
C7012G1019	5 lead wires that conform to NEC Class 1. (Additional wire, green/yellow insulation, for ground connection.)	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012G1027	5 lead wires that conform to NEC Class 1. (Additional wire, green/yellow insulation, for ground connection.)	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257
C7012G1035	5 lead wires that conform to NEC Class 1. (Additional wire, green/yellow insulation, for ground connection.)	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	For use with rectification flame signal amplifiers	Flame Amplifiers: R7247A, R7847A, R7257

C7015 Infrared (Lead Sulfide) Flame Detector



Application: Used for combination or dual-fuel applications
Type: Infrared (Lead Sulfide)
Dimensions, Approximate: 1 1/4 in. diameter, 2 3/4 in. long
 (32 mm diameter, 70 mm long)
Ambient Temperature Ratings: 125 F max at sensor
 (52 C max at sensor)

C7015A combination mount and 104662B and D Plug-in Lead Sulfide Cell senses infrared radiation from gas, oil, coal or dual-fuel flames.

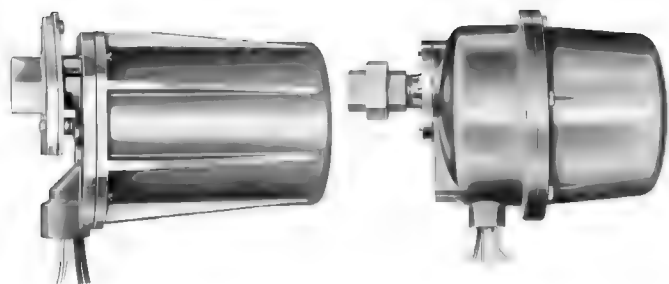
- Used for combination or dual-fuel applications.
- Detects pilot and main flame.
- Mounts quickly and easily on a standard 3/4 in. sighting pipe.
- Works where flame rod or rectifying photocell mounts are difficult to apply.
- Includes 110634A Bushing with magnifying lens and 105134-00021 Orifice.
- Uses photoconductive lead sulfide cells 104662B and D.

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 24181.03
Industrial Risk Insurers: Acceptable
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Lead Lengths		Mounting Method	Comments	Used With	Includes
		(inch)	(mm)				
C7015A1076	Two no.18 AWG wires	30 in.	762 mm	3/4 in. NPT.	Infrared (Lead Sulfide) Flame Detector	Flame Amplifiers: R7248, R7848, R7748, R7258	Includes 104662B Sensitivity Cell
C7015A1092	Two no.18 AWG wires	96 in.	2.4 m	3/4 in. NPT.	Infrared (Lead Sulfide) Flame Detector	Flame Amplifiers: R7248, R7848, R7748, R7258	Includes 104662D Sensitivity Cell
C7015A1126	Two no.18 AWG wires	48 in.	1.2 m	3/4 in. NPT.	Infrared (Lead Sulfide) Flame Detector	Flame Amplifiers: R7248, R7848, R7748, R7258	104662D Sensitivity Cell

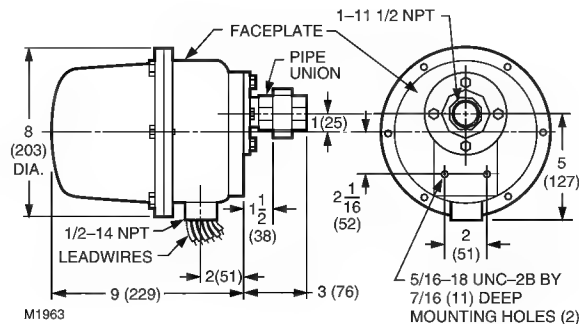
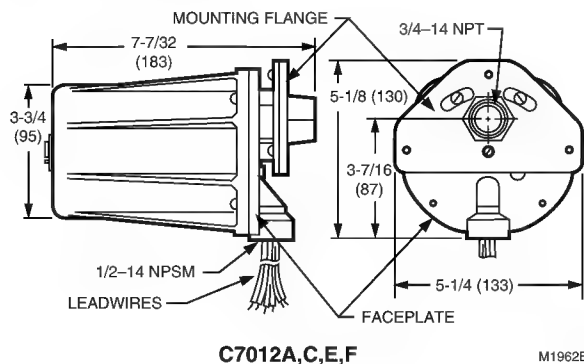
Flame Detectors

C7024 Solid State Purple Peeper® Ultraviolet Flame Detector



- 24 Vdc solid state electronic flame detectors for sensing the ultraviolet radiation emitted by the combustion of most carbon containing fuels, such as natural gas, LP gases, and oil.
- Use with R7824C Dynamic Self-Check Flame Signal Amplifier.
 - Circuitry provides low power consumption and high reliability.
 - Mount horizontally, vertically or at any angle in between.
 - Field-replaceable UV radiation sensing tube and quartz viewing window.
 - Quick electrical installation with threaded conduit fitting and color-coded leadwires.
 - Reduce nuisance shutdowns by wiring two in parallel.
 - Oscillating shutter interrupts UV radiation 12 times per minute with R7824C.

Dimension Diagrams



Application: Gas fired burners
Oil fired burners
Coal fired burners
Type: Ultraviolet, Purple Peeper, Self-Checking
Dimensions, Approximate: 5 1/4 in. diameter (includes mounting flange), 7 7/32 in. long
(133 mm diameter (includes mounting flange), 183 mm long)

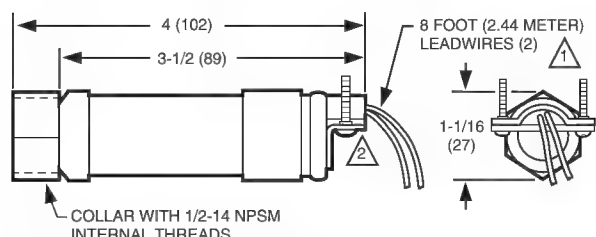
Electrical Ratings: 24 Vdc
Ambient Temperature Ratings: -20 F to 175 F (-20 C to 79 C)
Weight: 4.25 (1.9 kg)
Approvals:
Canadian Standards Association: Certified
Underwriters Laboratories, Inc: Component Recognized: File No. MP268

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Comments	Used With
		(inch)	(mm)				
C7024E1001	Six NEC CLASS 1 color-coded leaders	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Works with 24 Vdc only	Flame Amplifiers: R7824C
C7024F1009	Six NEC CLASS 1 color-coded leaders	8 ft.	2.4 m	1 in. NPT	Explosion Proof	Works with 24 Vdc only, explosion-proof, two piece, violet, cast aluminum.	Flame Amplifiers: R7824C

C7027 Minipeeper Ultraviolet Flame Detector



Dimension Diagrams



△ C7027A1064 HAS 24 FOOT (7.32 METER) LEADWIRES.
C7027A1114 HAS 44 IN. (1.118 M) LEADWIRES WITH
22 IN. (558 MM) FLEXIBLE CONDUIT.

△ MODELS AVAILABLE WITH SPUD CONNECTOR (1/2-14 NPSM INTERNAL
THREADS) INSTEAD OF CLAMP TYPE CONNECTOR.

C7027

M1943F

Compact Flame Detector for use with flame safeguard controls with ultraviolet amplifiers.

- Use on Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
- Mounts on a 1/2 in. sighting pipe by using an integral collar.
- Wires in parallel for difficult sighting applications.
- Seals against pressures as high as 5 psi (34.5kPa) when correctly installed.
- Allows for blast tube mounting due to compact size.

Application: Gas fired burners

Oil fired burners

Coal fired burners

Type: Ultraviolet, Minipeeper

Dimensions, Approximate: 1 1/16 in. diameter, 4 in. long
(27 mm diameter, 102 mm long)

Ambient Temperature Ratings: 0 F to 215 F (-18 C to 102 C)

Vibration Rating: 0.5g max

Approvals:

Canadian Standards Association: Certified: Master Report
LR95329-1

Factory Mutual: Approved: Report No. 24181.03

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No.
MCCZ

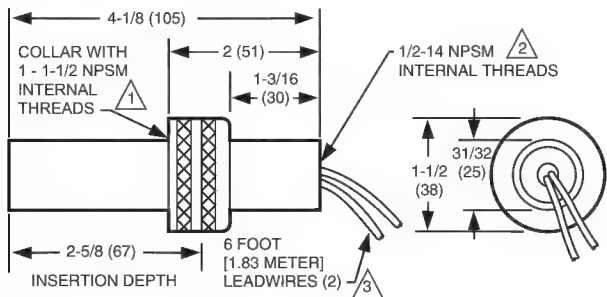
Product Number	Electrical Connections	Lead Lengths		Mounting Method	Comments	Used With	Includes
		(inch)	(mm)				
C7027A1023	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	—
C7027A1031	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	—
C7027A1049	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	1/2 in. NPT threaded spud connector.
C7027A1056	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	—
C7027A1064	2 NEC Class 1 leadwires.	24 ft.	7.3 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	1/2 in. NPT threaded spud connector.
C7027A1072	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	1/2 in. NPT threaded spud connector.
C7027A1080	2 NEC Class 1 leadwires.	8 ft.	2.4 m	Integral nut for 1/2 in. sighting pipe.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290	136733 Heat Block and 390427B bushing

Flame Detectors

C7035 Minipeeper Ultraviolet Flame Detector



Dimension Diagrams



- 1** DIN APPROVED C7035A1064 HAS 1-11 BSP.P1 INTERNAL MOUNTING THREADS.
- 2** DIN APPROVED C7035A1064 HAS 1/2-14 BSP-F INTERNAL MOUNTING THREADS.
- 3** C7035A1056 HAS 12 FOOT (3.66 METER) LEADWIRES.

C7035

M1945D

- Compact flame detector for use with flame safeguard controls with ultraviolet amplifiers.**
- Use on Honeywell Flame Safeguard primary safety controls and burners requiring ultraviolet flame detection.
 - Mounts on a 1 in. sighting pipe by using an integral collar.
 - Protects the sensing tube with a shield.
 - Meets outdoor raintight requirements of Underwriters Laboratories Inc., NEMA 3 and NEMA 4.
 - Wires in parallel for difficult sighting applications.
 - Seals against pressures as high as 5 psi (34.5 kPa) when correctly installed.
 - Field-replaceable ultraviolet sensing tube.

Application: Gas fired burners
Oil fired burners
Coal fired burners

Type: Ultraviolet, Minipeeper

Dimensions, Approximate: — (38 mm diameter, 105 mm long)

Ambient Temperature Ratings: 0 F to 250 F (-18 C to 121 C)

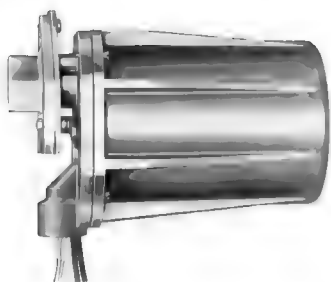
Vibration Rating: 0.5g max

Weight: 6 oz (0.17 kg)

Approvals:
Canadian Standards Association: Certified: Master Report LR95329-1
Factory Mutual: Approved: Report No. 24181.03
Industrial Risk Insurers: Acceptable
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Lead Lengths		Conduit Connection	NEMA Rating	Comments	Used With
		(inch)	(mm)				
C7035A1023	2 NEC Class 1 leadwires.	6 ft.	1.8 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290
C7035A1031	2 NEC Class 1 leadwires.	6 ft.	1.8 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290
C7035A1049	2 NEC Class 1 leadwires.	6 ft.	1.8 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290
C7035A1056	2 NEC Class 1 leadwires.	12 ft	3.5 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290
C7035A1064	2 NEC Class 1 leadwires.	6 ft.	1.8 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290
C7035A1080	2 NEC Class 1 leadwires.	6 ft.	1.8 m	Integral nut for 1/2 in. sighting pipe.	NEMA 3 and NEMA 4	Detects ultraviolet radiation in flames	Flame Amplifiers: R7249A, B, R7849A, B, R7749B, R7259, R7290

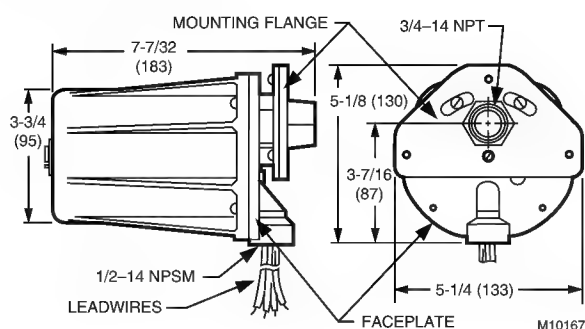
C7061 Dynamic Self-Check Ultraviolet Flame Detector



Dynamic self-checking flame detector used with R7861 Dynamic Self-check Amplifiers for sensing the ultraviolet radiation generated by the combustion of gas, oil, or other fuels.

- Oscillating shutter interrupts ultraviolet radiation reaching the UV sensor 12 times per minute to provide the UV sensor tube checking function. Amplifier circuitry components are checked from the microprocessor in the 7800 SERIES Control.
- Can be mounted horizontally, vertically or at any angle in between. The detector requires faceplate alignment and has integral locating reference points to assure proper operation of the shutter mechanism.
- Field replaceable ultraviolet radiation sensing tube and quartz viewing window.
- Treaded conduit fitting and color-coded leadwires allow rapid electrical installation.
- Two detectors can be wired in parallel to reduce nuisance shutdowns in difficult flame sighting applications.
- Incorporates UV sensor tube checking feature; used with R7861 Dynamic Self-check Amplifiers.
- Housing meets NEMA 4 enclosure standards.
- Protective heat block built into mounting flange.
- Swivel mount is available to facilitate flame sighting.
- -40 F (-40 C) rated ultraviolet sensing tube is available.

Dimension Diagrams



Application: Gas fired burners

Oil fired burners

Type: Ultraviolet, Purple Peeper, Self-Checking

Dimensions, Approximate: 5 1/4 in. diameter (includes mounting flange), 7 7/32 in. long

(133 mm diameter (includes mounting flange), 183 mm long)

Ambient Temperature Ratings: -40 F to 175 F (-40 C to 79 C)

Vibration Rating: —

Weight: 2.6 lb (1.2 kg)

Approvals:

Canadian Standards Association: Certified: Master Report LR95329-1

Factory Mutual: Approved: Report No. 14740.01

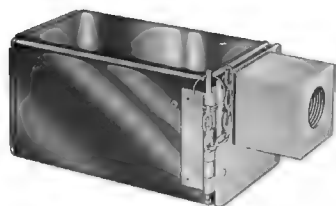
Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Comments	Used With
		(inch)	(mm)				
C7061A1012	Color coded lead wires	8 ft.	2.4 m	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7861
C7061A1038	Brad Harrison type number 41310 connector	—	—	3/4 in. NPT.	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7861
C7061A1046	Brad Harrison type number 41310 connector	—	—	1 in. NPT	NEMA 4	Dynamic self-checking flame detector	Flame Amplifiers: R7861
C7061F2001	Color coded lead wires	8 ft.	2.4 m	1 in. NPT	Explosion Proof	Dynamic self-checking flame detector	Flame Amplifiers: R7861

Flame Detectors

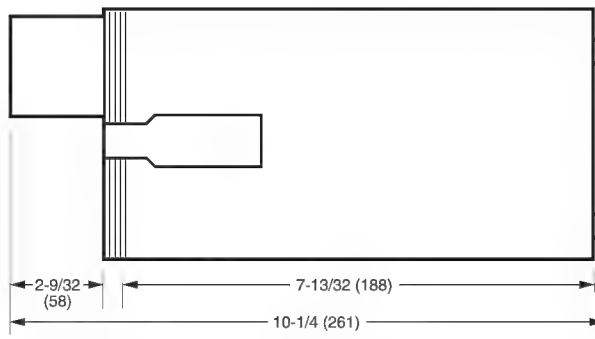
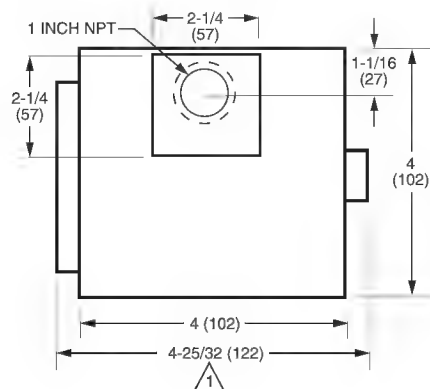
C7076 Ultraviolet Flame Detector



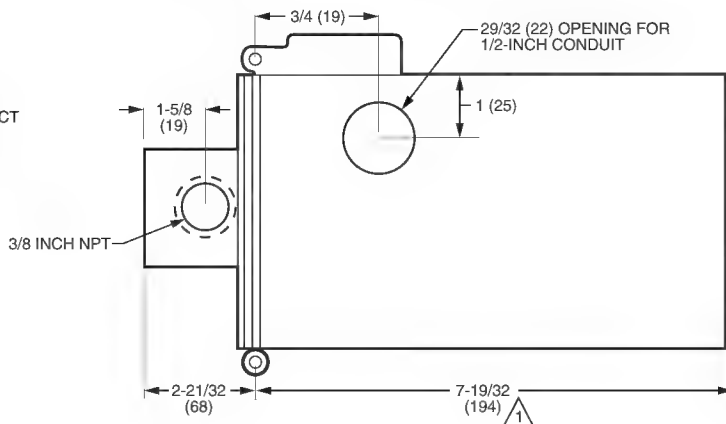
Solid state dynamic self check flame detectors for use with BC7000, R4140 or FSP5075 with R7476 Amplifier and 7800 SERIES with R7886 Amplifier.

- Use Honeywell Flame Safeguard primary safety controls requiring adjustable sensitivity ultraviolet flame detection.
- Detect ultraviolet radiation from flames.
- Include dual sensitivity adjustment.

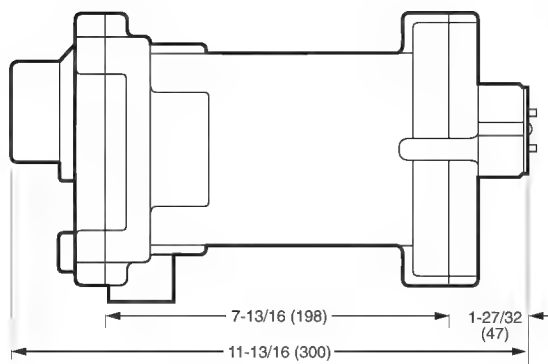
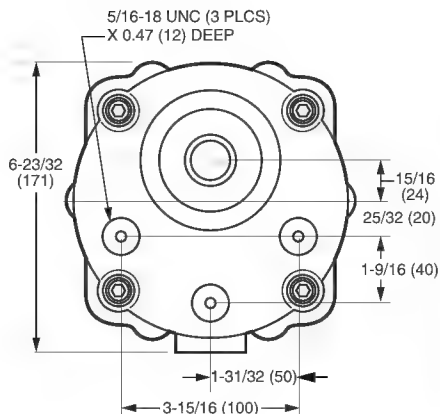
Dimension Diagrams



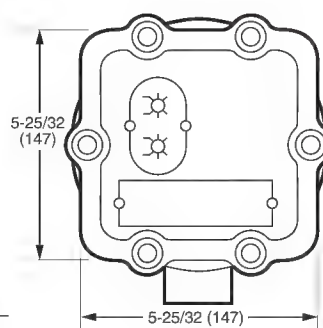
1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.



C7076A



C7076D



M20749A

Application: Gas fired burners

Oil fired burners

Type: Ultraviolet, Adjustable Sensitivity

Dimensions, Approximate: 4 in. high, 4 in. wide, 10 1/4 in. deep
(102 mm high, 102 mm wide, 261 mm deep)

Electrical Ratings: 120 Vac

Frequency: 60 Hz

Ambient Temperature Ratings: -40 F to 160 F (-40 C to 71 C)

Vibration Rating: 0.5g max

Approvals:

Canadian Standards Association: Certified: Master Report LR1620

Factory Mutual: Approved: Report No. FM26980

Industrial Risk Insurers: Acceptable

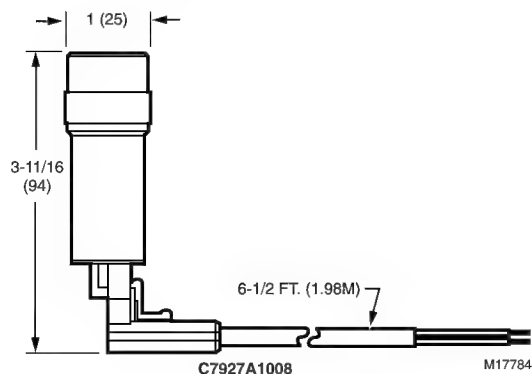
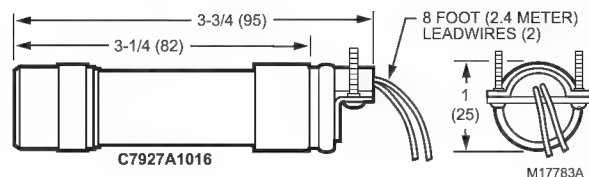
Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Product Number	Electrical Connections	Mounting Method	NEMA Rating	Comments	Used With
C7076A1007	Terminal block	1 in. NPT	NEMA 4	Dynamic self-checking flame detector with adjustable sensitivity	Flame Amplifiers: R7476, R7886
C7076A1015	Terminal block	1 in. NPT	NEMA 4	Dynamic self-checking flame detector with adjustable sensitivity	Flame Amplifiers: R7476, R7886
C7076A1031	Terminal block	1 in. NPT	NEMA 4	Dynamic self-checking flame detector with adjustable sensitivity	Flame Amplifiers: R7476, R7886
C7076D1027	Terminal block	1 in. NPT	NEMA 7	Dynamic self-checking flame detector with adjustable sensitivity	Flame Amplifiers: R7476, R7886
C7076D1043	Terminal block	1 in. NPT	NEMA 7	Dynamic self-checking flame detector with adjustable sensitivity	Flame Amplifiers: R7476, R7886

C7927 Solid State Ultraviolet Flame Detector



Dimension Diagrams



The Solid State Ultraviolet Flame Detectors detect the ultraviolet radiation emitted by combustion flames. The flame detectors are used with Honeywell flame safeguard controls to provide flame supervision for gas, oil, or combination gas-oil burners.

- Properly installed the flame detectors are pressure rated for 5 psi.
- Flame detector is used with only the R7851B Flame Amplifier and the 7800 SERIES controls.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on a one-half inch sight pipe.

Application: Gas, Oil, or combination burners-intermittent operation only(burner cycled at least once each 24 hours).

Type: Ultraviolet, Minipeeper

Dimensions, Approximate: 1 in. diameter, 3 3/4 in. long
(25 mm diameter, 95 mm long)

Ambient Temperature Ratings: -4 F to +140 F (-20 C to 60 C)

Vibration Rating: 0.5g max

Approvals:

Canadian Standards Association: Pending

Factory Mutual: Pending

Industrial Risk Insurers: Pending

Underwriters Laboratories, Inc: Component Recognized: File No. MP268

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Description	Comments	Used With
		(inch)	(mm)					
C7927A1008	77 in cable	77 inch with cable & Connector	195.6 cm with cable & Connector	1/2 in NPT pipe mounting	NEMA 1	Electronic flame detectors that detect ultraviolet radiation in flames.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7851B
C7927A1016	8 ft leadwires	8 ft.	2.4 m	1/2 in NPT pipe mounting	NEMA 1	Electronic flame detectors that detect ultraviolet radiation in flames.	Detects ultraviolet radiation in flames	Flame Amplifiers: R7851B

Flame Detectors

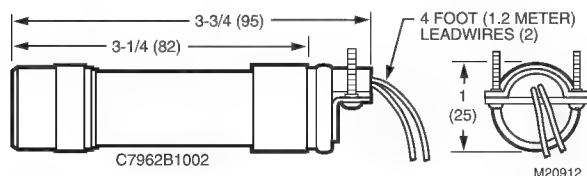
C7962 Visible Light Flame Detector



The C7962B Visible Light Flame Detector detects the visible light emitted by fuel oil combustion flames. The C7962B Detector is used with Honeywell Flame Safeguard controls to provide fuel oil flame supervision in commercial and industrial burners.

- Used with 7800 SERIES Flame Safeguard controls.
- Used with R7851B Flame Amplifier.
- Has an integral collar threaded (internal 1/2-14 NPSM) for mounting on 1/2 inch sight pipe.

Dimension Diagrams



Dimensions, Approximate: 1 in. diameter, 3 3/4 in. long
(25 mm diameter, 95 mm long)

Ambient Temperature Ratings: -40 F to 160 F (-40 C to 71 C)
-4 F to +140 F (-20 C to 60 C)

Vibration Rating: 0.5g max

Approvals:

Canadian Standards Association: Listed: Report No. 158158-1357526

Underwriters Laboratories, Inc: Component Recognized: File No. MP268, Vol 30.

Accessories:

32007439-001 Mounting Bracket and screws for C7962B

Application: Commercial, industrial oil burners

Type: Visible Light Flame Detector

Product Number	Electrical Connections	Lead Lengths		Mounting Method	NEMA Rating	Used With
		(feet)	(mm)			
C7962B1002	8 ft leadwires	8 ft.	2.4 m	1/2 in NPT pipe mounting	NEMA 1	Flame Amplifiers: R7851B

Optical Flame Detector Accessories or Parts

OS Number	Description	Used With
115330/520	Vacuum Tube for C7012	C7012
120934/520	Aluminum Flange Gasket for C7012A or C7012E	C7012
124198	Mounting Flange for C7012A, C7012C, C7012E, or C7012F	C7012
105134/0021	0.125 in. orifice for 1 in. NPT for C7015	C7015
190971G	24 Vdc Coil and Shutter Assembly for C7024E, F	C7024
24400152-001	Quartz lens replacement kit for C7076D consists of quartz lens, gasket, gasket seal	C7076
38570/0767	Holder for 38576 filter. Use with C7013A.	C7013
102288	Magnifying Lens for C7003	C7003
104662B	Lead Sulfide Cell, with yellow medium sensitivity for C7015	C7015
104662D	Lead Sulfide Cell, orange maximum sensitivity range for C7015	C7015
105061	3/4 in. Heat Block for C7015	C7015
105171	Gasket used in C7015 or C7027	C7015, C7027
105172A	Pressure Seal-off Adapter (3/4 NPT) for C7015	C7015
105172C	Pressure Seal-off Adapter (3/4 NPT) w/UV Quartz window for C7012, C7024, C7027, C7035, C7061, C7076	C7012, C7024, C7027, C7035, C7061, C7076
110412A	Slide Assembly for C7010	C7010
110634A	Magnifying Lens Assembly for C7015A	C7015
113228	UV Sensing Tube for C7012; C7024	C7012, C7024
113236	Vacuum Tube for C7012	C7012
113672A	Seal Off Assembly for C7012, C7024, C7061	C7012, C7024, C7061
114372	Bulk Pack -20 PSI window for C7012E, F; C7024; C7061	C7012, C7024, C7061
114465	Window Gasket for C7012A, E; C7024A; C7061A	C7024, C7061
114638	Rubber Washer for C7012A, E; C7024A; C7061A	C7012, C7024, C7061
115594A	Flange Assembly for C7012C, F; C7024F, C7061F	C7012, C7024, C7061
117181	Cork Gasket for C7012A, E; C7024A; C7061A	C7012, C7024, C7061

Flame Detectors

OS Number	Description	Used With
118367A	Swivel Mount for C7012, C7015, C7024, C7027, C7035, C7061, C7076	C7012, C7015, C7024, C7027, C7035, C7061, C7067
120739	Flange Gasket for C7012, C7024, C7061	C7024, C7061
121610	Magnifying Lens for C7013	C7013
122037	100 PSI Quartz Window for C7012C, F; C7061F	C7012C, F; C7061F
122748	50 PSI Quartz Window for C7012, C7061	C7012, C7061
123539	Anti-Vibration Mount for C7012, C7024 or C7061	C7012, C7024, C7061
124204	Quartz Magnifying Lens for C7012, C7024 or C7061	C7012, C7024, C7061
129464M	UV Power Tube (0 to 250F) for C7035	C7035
129464N	UV Power Tube (-40 to 250F) for C7035, C7061	C7035, C7061
129685	Flange Gasket for C7027	C7027
129808	Flange Gasket for C7035	C7035
129809	Mounting Nut for C7035	C7035
130716A	Auto Transformer for Vertical Mounting of C7012E, F, C7061A, F	C7012E, F, C7061A, F
133711	Adapter, 1/2 in. internal to 1/2 in. external for C7015	C7015
136733	Heat Block for C7027	C7027
190105	Water Cooling Jacket for C7012A, F; C7024; C7061	C7012, C7024, C7061
190971B	120 Vac Coil and Shutter Assembly for C7012E, F, C7061A, F	C7012E, F; C7061A, F
190971D	100 Vac Coil and Shutter Assembly for C7012E, F, C7061A, F	C7012E, F; C7061A, F,
190971E	120 Vac Coil and Shutter Assembly for C7076A, D	C7076A, D
191002B	120Vac Plug in Electronics less UV Sensing Tube for C7076A	C7076A
191050	Quartz Viewing Window for C7076	C7076
191053	UV Sensing Tube for C7076	C7076
191054	Housing Gasket for C7076	C7076
191284	Aluminum Shield for C7035	C7035
191286	UV Sensing Tube (-40F) for C7012, C7024	C7012, C7024
191702	Electronics less UV sensing tube for C7012F (120Vac)	C7012F
204341A	UV Mirror Assembly for C7012, C7024, C7027, C7035, C7061, C7076	C7012, C7024, C7027, C7035, C7061, C7076
32004080-001	120Vac Electronics less UV Sensing Tube for C7012F	C7012F
32004080-002	24Vdc Plug in Electronics less UV Sensing Tube for C7024F	C7024F
38242	Rajah Connector - Plug end for C7013	C7013
38576	Filter for C7013	C7013
191002R	120Vac Plug in Electronics less UV Sensing Tube for C7076D	C7076D
32007439-001	Mounting Bracket and screws for C7962B	C7962B
190971F	100 Vac Coil and Shutter Assembly for C7076A, D	C7076
4074BVK	Mounting Clamp, includes Machine Screw and Nut for C7044	C7044

Hydronic Controllers

W7100J Discharge Water Temperature Controller



A proportional plus derivative (P+D) discharge water temperature control for multistage electric boilers or multiple gas or oil-fired packaged hot water boilers. Provides up to six (6) stages of ON/OFF heating and with W7108B satellite sequencer adds up to four (4) additional ON/OFF heating stages

- Maintain average discharge water temperature for multiple boiler and staged electric boiler applications by staging on and off boilers.
- Provide up to six stages of heating.
- Use C7170 for sensing of water temperature.
- Staged lead/lag function equalizes stage run time, may be disabled for electric boilers.
- Use soft start to minimize boiler rapid cycling during system startup.
- Provides minimum on and off stage timings.
- Uses reset signal from C7031G outdoor air thermostat sensor.
- Provides remote set point capability with use of S963B.

Dimensions, Approximate: 8 5/8 in. high, 6 1/2 in. wide, 3 in. deep
(219 mm high, 165 mm wide, 76 mm deep)

Actuator Motor Speed: Frequency: 60 Hz

Accessories:

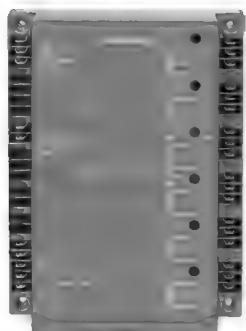
S963B1037 Manual Potentiometer (480 ohm)

S963B1078 Manual Potentiometer (500 ohm)

S963B1128 Manual Potentiometer (135 ohm)

Product Number	Timing	Electrical Ratings			Description
		Output	Power Consumption Driving	Supply Voltage	
W7100J1004	2 Minutes	240 Vac120 Vac24 Vac	12 VA	20 Vac to 30 Vac	Discharge Water Control

W7101A Satellite Sequencer



Provides up to 6 additional stages of heating/cooling control for W7100 Discharge air controller applications

- Extends capacity of W7100 Discharge Air system.
- Advanced microprocessor control algorithm minimizes droop.
- For system with or without economizer.
- Jumper selectable between 4 cool/2 heat or 2 cool/4 heat stages.
- LED's indicate operation of each output stage relay.

Dimensions, Approximate: (6-1/2" x 8-1/2" x 2-1/4" high)

Actuator Motor Speed: Frequency: 60 Hz

Product Number	Electrical Ratings	Used With
	Supply Voltage	
W7101A1003	20 Vac to 30 Vac	W7100

W7101B Discharge Air Controller Satellite Panel

Product Number	Description	Used With
W7101B1001	Discharge Air Controller Satellite Panel when interfaced with the W7100J, provides additional stages of heat	W7100J

W964 Aquatrol® Electronic Outdoor Reset Control



Provides reset control of hydronic boilers in commercial applications. Field-selectable on-off or proportional plus integral (P + I) control mode.

- Maintains a steady, comfortable indoor environment by varying the heating water temperature based on outdoor air conditions.
- Provides a 7-day quartz time clock for setback function during unoccupied periods.

Dimensions, Approximate: 5 5/8 in. high, 7 9/16 in. wide, 5 3/4 in. deep (143 mm high, 192 mm wide, 146 mm deep)

Actuator Motor Speed: Frequency: 50/60 Hz

Accessories:

T7160A1004 Space Compensation Sensor for W964F

Product Number	Electrical Ratings		Description
	Output	Supply Voltage	
W964F1037	120 Vac/24 Vac	120 Vac	Aquatrol® outdoor reset panel with a 7-day quartz clock and 50 hour battery backup
W964F1045	120 Vac/24 Vac	120 Vac	Aquatrol® outdoor reset panel without clock

Commercial Hydronic Controller Accessories

OS Number	Description	Used With
209918	10 red time clock pins used with W964F	W964F
209919	10 blue time clock pins used with W964F	W964F
7617ADR	Adapters for T7043A, T7043B and T7044A to connect U.S. conduit fitting to PG-11 thread.	T7043A, T7043B, T7044A
197918	Tamper Proof Cover for T7160	T7160
197942	7 Day Quartz Timer for W964F	W964F
4074EDJ	Bag Assembly including Test Plug and Resistors for W7100	W7100
4074EFV	Bag Assembly including Resistors for Number of Stages for W7100J	W7100J
T7043A1023	Indoor Immersion Sensor for W964F	W964F
T7043B1013	Outdoor Sensor for W964F	W964F
T7044A1014	Strap on Indoor Sensor for W964F	W964F
T7160A1004	Space Compensation Sensor for W964F	W964F

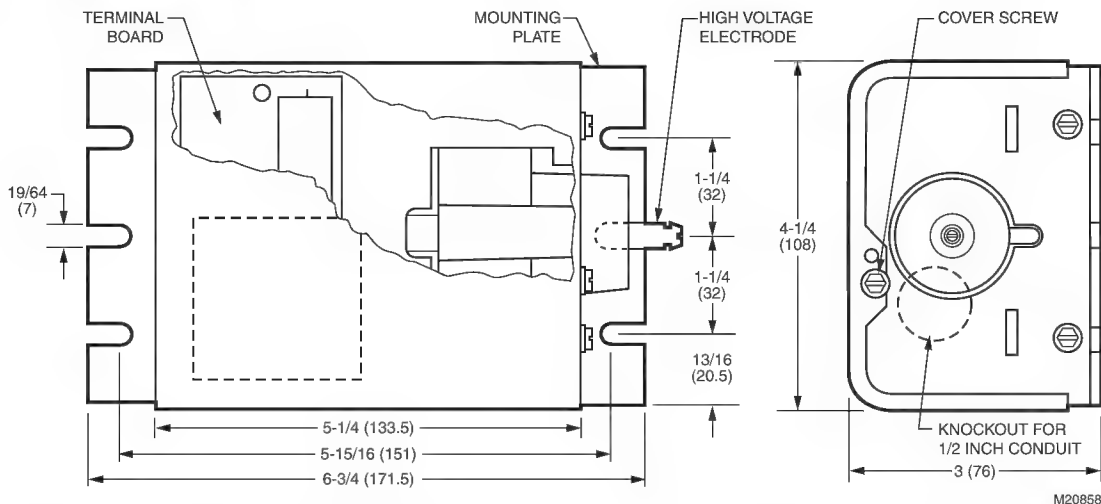
Ignition Transformers

Q624 Solid State Ignition Transformer



- Use to ignite pilots on commercial or industrial gas burners.**
- Ignite gas pilots with spark gaps up to 1/4 in. (6.5 mm).
 - Reliable lightoff with 15,000 peak voltage.
 - Prevent detection of the ignition spark when properly applied in a flame detection system with the C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector.
 - For use only in interrupted ignition applications.
 - Mount in same space used by conventional ignition transformer.
 - Light weight, 3 lbs. (1.4 kg) versus 8-1/2 lbs. (3.9 kg) for standard transformers.

Dimension Diagrams



Humidity Range: 95% RH
Ambient Temperature Rating: -40 to +125 F (-40 to + 52 C)
Weight (lb): 3 lbs (1.4 Kg)
Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2
Underwriters Laboratories, Inc: Component Recognized

Product Number	Electrical Ratings		Description
	Power Supply (Vac)	Power Supply (Hz)	
Q624A1014	120	50 Hz, 60 Hz	Gas Ignition Transformer

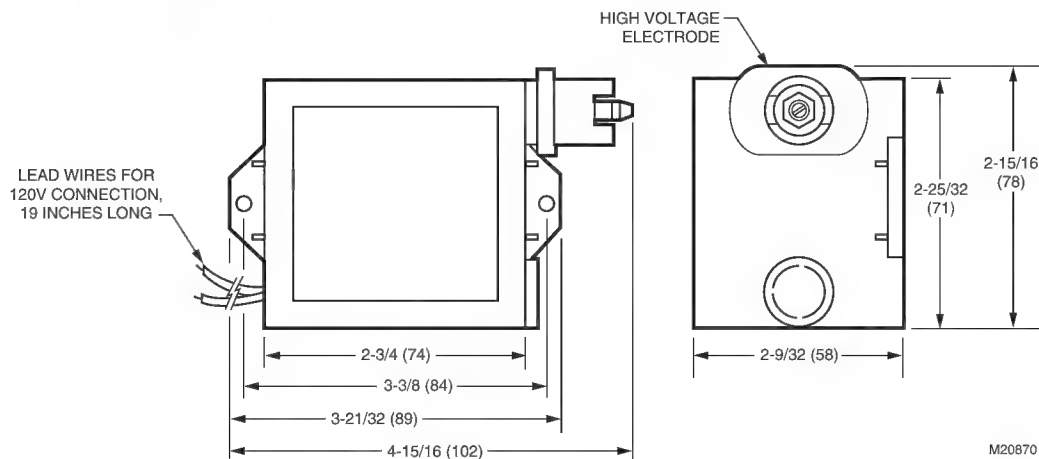
Q652 Solid State Spark Generator



Use to ignite power gas burners in commercial and industrial applications.

- Lightweight, 1 lb. (0.4 kg).
- Include single high voltage electrode for gas applications.
- For use only with interrupted gas pilots with electrode spacings between 0.029 and 0.125 in.
- Mount in same space used by conventional ignition transformer.
- Prevent detection of the ignition spark when properly applied in a flame detection system with the C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector.

Dimension Diagrams



Humidity Range: 90% RH
Ambient Temperature Rating: -40 to 113 F (-40 to +45 C)
Weight (lb): 1 lbs (0.4 Kg)
Approvals:

Canadian Standards Association: LA66894
Underwriters Laboratories, Inc: Component Recognized File MH14381

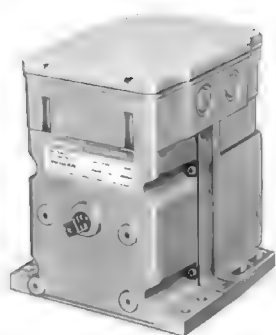
Product Number	Electrical Ratings		Description
	Power Supply (Vac)	Power Supply (Hz)	
Q652B1006	120	60	Gas Ignition Transformer

Ignition Transformer Accessories or Parts

OS Number	Description	Used With
134666/510	High voltage terminal insulator for Q652 and Q624	Q624, Q652
32004766-003	Ignition/flame rod cable for Q624 or Q652, priced per foot	Q624
4074BTN	Bag assembly consisting of washer (103218), cap terminal (135793) and ferrule (37356) for Q624A	Q624
4074EJP	Screw cap for Q624A (135793)	Q624
32004766-001	Ignition Cable Assembly with 24 inch (609 mm) leads	Q624, Q652
32004766-002	Ignition Cable Assembly with 120 inch (3048 mm) leads	Q624, Q652
32004766-004	Ignition Cable Assembly with 60 inch (1524 mm) leads	Q624, Q652

Motors, Firing Rate

M9484D,E,F; M9494D Modutrol® IV Motors



Reversing, proportional motors used to drive burner firing rate valves, dampers or auxiliary equipment. Replace M941A,C,D motors.

- Designed for flame safeguard applications in commercial/industrial oil or gas burner system.
- Vibration resistant electronic drive circuit.
- Regulated by three-wire proportional controller.
- Stroke is field-adjustable to 90 or 160 degrees.

Dimensions, Approximate: 6.45 in. high, 5.50 in. wide, 7.30 in. deep (164 mm high, 140 mm wide, 185 mm deep)

Power Consumption: 18 W

Power Supply: 24 Vac

Crankshaft: double-ended, 3/8 in. (9.5 mm) square

Dead Weight Load On Power Shaft: 200 lb (300 lb combined power and auxiliary shafts)

(90.8 kg (136 kg combined power and auxiliary shafts))

Materials: 200 lb (300 lb combined power and auxiliary shafts)

(90.8 kg (136 kg combined power and auxiliary shafts))

Frequency (Hz): 50/60 Hz

Input Signal: 135 ohm

Switch Ratings (120 Vac): (7.2 AFL, 43.2 ALR, 40 VA pilot duty opposite contact)

Switch Ratings (240 Vac): 3.6 AFL, 21.6 ALR, 40 VA pilot duty opposite contact

Temperature Ratings (ambient): -40 F to 150 F (-40 C to 66 C)

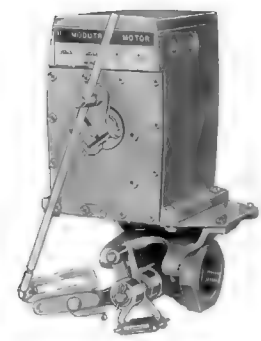
Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E

Underwriters Laboratories, Inc: Listed: File No. E4436, Guide No. XAPX

Product Number	Torque, running	Torque, Breakaway		Timing		Auxiliary Switch	Auxiliary Switch Setting	Comments
		(lb-in.)	(Nm)	90 degree stroke (sec)	160 degree stroke (sec)			
M9484D1010	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	—	—	—
M9484E1009	75 lb-in; 8.5 N m	150 lb-in.	17.0 Nm	15 seconds	30 seconds	1	11 degrees	Includes tapped shaft
M9484E1017	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	1	1 degree	—
M9484E1033	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	1	4 degrees	Shipped in 90 degree position, includes motor crank arm
M9484F1007	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	2	5 degrees and 54 degrees	Shipped in 90 degree position
M9484F1023	75 lb-in; 8.5 N m	150 lb-in.	17.0 Nm	15 seconds	30 seconds	2	—	Includes tapped shaft
M9484F1031	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	2	5 degrees and 54 degrees	Shipped in 90 degree position, includes tapped shaft
M9484F1049	150 lb-in; 17.0 N m	300 lb-in.	34.0 Nm	30 seconds	60 seconds	2	35 degrees and 120 degrees	Shipped in 160 degree position
M9494D1000	150 lb-in; 17.0 N m	150 lb-in.	17.0 Nm	30 seconds	60 seconds	—	54 degrees and 5 degrees	—

Q100 Butterfly Valve Linkages



Connects V51E valve to M9484 and M9494 Modutrol IV Motors with adapter plate.

- Fits all sizes of V51E Valves
- Mounts easily.

Linkage Type: Butterfly Gas Valve

Mounting: Comments: Use with V51E Gas Valve

Product Number	Valve Size Compatibility (in)	Linkage Rod	Use with Actuator	Includes
Q100B1006	all sizes	10 3/4 in.	Modutrol Motor	—
Q100C1021	2 1/2 and 3	8 1/2 in.	Actionator Motor	Adapter bracket
Q100C1039	4	9 1/8 in.	Actionator Motor	Adapter bracket

Accessories

OS Number	Description	Used With
24107	Swivel joint for Q100B	Q100B

Network Interface

Q7700 Network Interface Unit



Dimensions, Approximate: 9 in wide, 8 in. high, 4 7/8 in deep
(229 mm wide, 203 mm high, 123 mm deep)

Communications: RS485 ControlBus™

Electrical Ratings (Power Supply): 120 Vac

Electrical Connections: 25 D pin connector (local), 9 D pin (remote)

Frequency: 50/60 Hz

Humidity Ratings (% RH): operating: 85% RH continuous

Allows remote monitoring and diagnostics of the BCS 7700 or 7800 SERIES with an IBM®-compatible personal computer.

- Connects with up to six BCS 7700s or 7800 SERIES systems.
- Auto-dialout on BCS 7700 or 7800 SERIES faults up to three telephone numbers.
- Access control, password protection.
- Dialout override for service alarms.
- Internal software clock for date and time stamping of faults.
- Light Emitting Diode (LED) status indication.
- Modular construction. On-line data logging.
- Personal computer interface; user friendly and menu driven.
- Selectable 300 or 1200 baud for ASCII device.
- 9600 baud for local personal computer interface.

Enclosure: NEMA 1

Weight: 4 lbs, 10 oz (2.1 kg)

Temperature Ratings (ambient): 32 F to 130 F (0 C to 54 C)

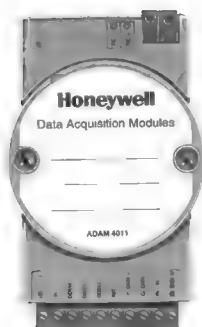
Temperature Ratings (Shipping): -30 F to 150 F (-34 C to + 66 C)

Accessories:

200603 Electrical Connectors a-c for BC7700, ST7700, ST7705

Product Number	PC Requirements	Description
Q7700A1014	486 DX2 66 MHz IBM® compatible, 16 MB memory, 50 MB available hard disk space, 2X CD-ROM drive, Super VGA color monitor, 3.5 in. diskette drive, serial port for modem, mouse or touch screen, parallel port for printer, printer, keyboard.	Local and remote monitoring and diagnostics
Q7700B1004	486 DX2 66 MHz IBM® compatible, 16 MB memory, 50 MB available hard disk space, 2X CD-ROM drive, Super VGA color monitor, 3.5 in. diskette drive, serial port for modem, mouse or touch screen, parallel port for printer, printer, keyboard.	Local and remote monitoring and diagnostics

QM4520 Isolated RS-232 to RS-485 Converter Module



Isolated RS-232 to RS-485 Converter Module.

- Accepts RS-232 signal as input (4-wire: TX, RX, RTS, and GND). (Null modem may be required.)
- Outputs RS-485 signal (2-wire).
- Isolation voltage is 500 Vdc.
- Power consumption: 1.2W.
- Mounts on DIN rail, panel or in a 'piggyback' stack.

Dimensions, Approximate: 2 11/32 in. wide, 4 3/32 in. high, 1 3/16 in. deep (60 mm wide, 112 mm high, 30 mm deep)

Communications: RS-485 two wire host; Baud Rates: 1200, 2400, 4800, 9600, and 19200 bps.

Electrical Ratings (Power Supply): Unregulated +10 Vdc to +30 Vdc; protected against power reversal

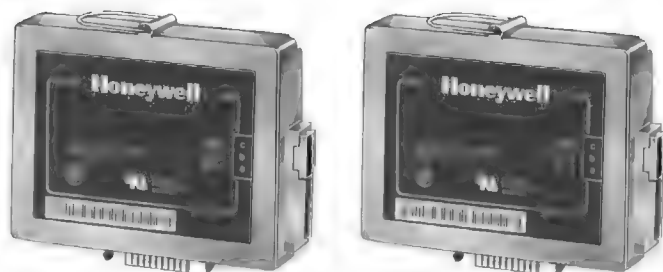
Humidity Ratings (% RH): 5 to 95% RH, non-condensing

Weight: 6 oz (174 g)

Temperature Ratings (ambient): 32 F to 158 F (0 C to +70 C)

Product Number	Description
QM4520A1004	RS-232 to RS-485 converter

QS7800A; QS7850 Network Interface ControlBus™ Modules



Allows remote monitoring and diagnostics of the BCS 7700 or 7800 SERIES relay modules.

- Provides local and remote annunciation of 7800 SERIES and BCS 7700 faults.
- Up to six ControlBus™ Modules per Network Interface Unit.
- Modular construction, NEMA 1 rated enclosure.

Dimensions, Approximate: 4 21/32 in. wide, 3 29/32 in. high, 1 in. deep (118 mm wide, 99 mm high, 25 mm deep)

Communications: RS485 ControlBus™

Electrical Ratings (Power Supply): Current Draw: 75 mA

Humidity Ratings (% RH): operating: 85% RH continuous

Enclosure: NEMA 1

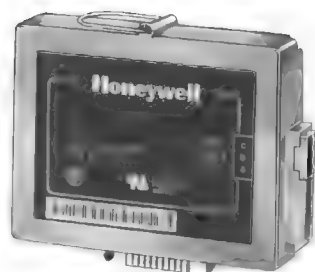
Weight: 8 oz (227 g)

Temperature Ratings (ambient): 32 F to 130 F (0 C to 54 C)

Temperature Ratings (Shipping): -30 F to 150 F (-34 C to + 66 C)

Product Number	PC Requirements	Description	Includes	Used With
QS7800A1001	486 IBM® compatible personal computer and ZM7850A Combustion System Manager Software	Network Interface ControlBus™ Module	200603 ControlBus™ Three-Prong Electrical Connector	RM7800 Series
QS7850A1006	—	General Purpose Interface ControlBus™ Module	200603 ControlBus™ Three-Prong Electrical Connector	—

QS7800B Network Interface ControlBus™ Modules



Allows remote monitoring and diagnostics of multi-dropped 7800 SERIES Relay Modules.

- Up to six ControlBus™ Modules per Network Interface Unit.
- Up to 32 multi-dropped 7800 SERIES subnetworks per module without a RS-485 repeater; up to 61 subnetworks with a repeater.
- Provides local and remote annunciation of 7800 SERIES Relay Module faults.
- Personal computer user interface.
- Modular construction.
- Microsoft Windows™ based Combustion System Manager™ user interface.

Dimensions, Approximate: 4 21/32 in. wide, 3 29/32 in. high, 1 in. deep (118 mm wide, 99 mm high, 25 mm deep)

Communications: RS485 ControlBus™

Electrical Ratings (Power Supply): Current Draw: 75 mA

Frequency: Humidity Ratings (% RH): operating: 85% RH continuous

Enclosure: NEMA 1

Weight: 8 oz (227 g)

Temperature Ratings (ambient): 32 F to 130 F (0 C to 54 C)

Temperature Ratings (Shipping): -30 F to 150 F (-34 C to + 66 C)

Product Number	PC Requirements	Description	Includes	Used With
QS7800B1000	486 IBM® compatible personal computer and ZM7850A Combustion System Manager Software	Network Interface ControlBus™ Module	200603 ControlBus™ Three-Prong Electrical Connector	Multi-Dropping 7800 SERIES Relay Modules

ZM7850 Combustion System Manager™ Software

The ZM7850 Operator Interface Software is used to monitor BCS7700 and 7800 SERIES with a personal computer running Microsoft Windows® 3.0 or higher.

- Dynamic graphical monitoring.

- Virtual face plates that simulate burner or boiler face plates.
- Historical and live trending or points.
- Automatic fault annunciation.
- Automatic time-of-day report generation.

Product Number	PC Requirements	Description	Used With
ZM7850A1001	486 IBM® compatible personal computer, DOS 5.0 or later; Windows™ 3.1, 95, or 98, 8 MB RAM and 80 MB available hard disc space	Combustion System Manager Software	BCS7700 and 7800 SERIES Points

Network Interface

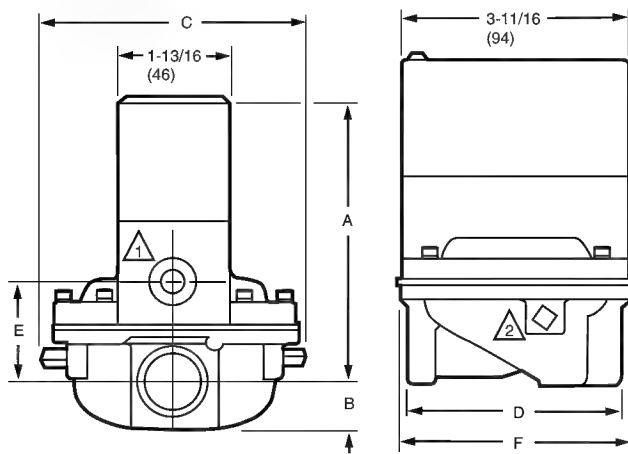
Network Interface Accessories

OS Number	Description
206610A	Accessory Disk for QS7850
209162	Power Supply for Din Rail Mounting - 110V
209163	Power Supply for Din Rail Mounting - 220V
209164	Power Supply for Din Rail Mounting - 120/240V
221769	Barrier to Cover Wiring for Q7800A, B
221237/1698	Cover assembly-base unit for Q7700A

V48A; V88A Diaphragm Gas Valves



Dimension Diagrams



1 BLEED TAPPING: 1/8-27 NPT, OR 1/8-28 BSP. PL.

2 PILOT TAPPING (2): 1/8-27 NPT FOR 3/4 THROUGH 1-1/2 IN. SIZES, 1/4-18 NPT FOR 2 THROUGH 3 IN. SIZES; OR 1/8-28 BSP. PL FOR 1 THROUGH 1-1/2 IN. SIZES, 1/4-19 BSP. PL FOR 2 THROUGH 3 IN. SIZES.

M8487

Body Material: Aluminum
Electrical Terminations: 6 in. Leadwires
Frequency: 60 Hz
Ground terminal: Yes
Mounting Type: Upright (horizontal)
Temperature Ratings: 32 F to 125 F (0 C to 52 C)
Pressure Ratings: 1/2 psi (3.4 kPa)
Pilot Tapping: 1/8-27 NPT
Power Consumption: 9 W, 15 VA max
Valve pattern: Straight-through
Approvals:
Canadian Standards Association: Certificate No. 158158-2500005576 (Z21.21-CSA 6.5)
Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ

Solenoid-operated diaphragm valves provide slow opening and fast closing for controlling fuel gases.

- Close firmly with diaphragm that is both weight and spring loaded.
- Close on power failure; recommended for final shutoff service.
- Set opening time with various sized bleed orifices or adjustable bleed valve.
- Use with LP, natural or manufactured gases.
- Made with cast aluminum in straight-through valve pattern.
- Optional valve position indicator available for 1-1/4 in. and larger valves.

VALVE SIZE (IN.)	APPROXIMATE DIMENSIONS											
	A		B		C		D		E		F	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	4-11/16	119.1	3/4	19.1	4-5/8	117.5	3-1/2	88.9	1-5/8	41.3	3-13/16	96.8
1	5-1/16	128.6	1	25.4	5	127.0	3-11/16	93.7	2-1/16	52.4	4-5/16	109.5
1-1/4	5-9/16	141.3	1-1/4	31.8	5-7/8	149.2	5-5/16	134.9	2-3/8	60.3	5-5/16	134.9
1-1/2	5-9/16	141.3	1-1/4	31.8	5-7/8	149.2	5-5/16	134.9	2-3/8	60.3	5-5/16	134.9
2	6-15/16	176.2	2-1/4	57.2	9-1/2	241.3	8-3/8	212.7	3-9/16	90.5	5-5/16	236.5
2-1/2	6-15/16	176.2	2-1/4	57.2	9-1/2	241.3	8-3/8	212.7	3-9/16	90.5	5-5/16	236.5
3	6-15/16	176.2	2-1/4	57.2	9-1/2	241.3	8-3/8	212.7	3-9/16	90.5	5-5/16	236.5

Capacity:

Pipe size (in.)	AGA Certified 1.0 in. pd Natural Gas cfh	m ³ /hr
3/4 in.	668 cfh	18.9 m ³ /hr
1 in.	1021 cfh	28.9 m ³ /hr
1 1/4 in.	2100 cfh	59.5 m ³ /hr
1 1/2 in.	2400 cfh	67.9 m ³ /hr
2 in.	4178 cfh	118.3 m ³ /hr
2 1/2 in.	5100 cfh	144.4 m ³ /hr
3 in.	5562 cfh	157.5 m ³ /hr

Current (max amps at rated Vac/Hz):

V48A	0.12 amps
V88A	0.62 amps

Replacement Parts:
See chart on page 745

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time	Replacement Parts	Comments
V48A2151	3/4 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V48A2169	1 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V48A2177	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V48A2185	1 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—

Diaphragm Gas Valves

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time	Replacement Parts	Comments
V48A2227	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	Includes position indicator
V48A2243	2 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	2 sec max	5 sec max	116931 Coil	—
V48A2250	2 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	2 sec max	5 sec max	116931 Coil	—
V48A2268	3 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	2 sec max	5 sec max	116931 Coil	—
V48A2276	1 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V48A2334	1 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V48A2342	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	1 sec max	5 sec max	116931 Coil	—
V88A1618	1 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1626	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1634	1 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1659	3/4 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1667	3/4 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1675	1 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1683	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1691	1 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	116930 Coil	—
V88A1709	2 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	2 sec max	5 sec max	116930 Coil	—
V88A1717	2 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	2 sec max	5 sec max	116930 Coil	—
V88A1725	3 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	2 sec max	5 sec max	116930 Coil	—

V48F Diaphragm Gas Valves



Dimension Diagrams
See diagram on page 739

Body Material: Aluminum
Electrical Terminations: 6 in. Leadwires
Frequency: 60 Hz
Ground terminal: Yes
Mounting Type: Upright (horizontal)
Temperature Ratings: 32 F to 125 F (0 C to 52 C)
Pressure Ratings: 5 psi (34.5 kPa)
Pilot Tapping: 1/4-18 NPT
Power Consumption: 9 W, 15 VA max
Valve pattern: Straight-through
Approvals:
Canadian Standards Association: Certificate No. 158158-2500005576 (Z21.21-CSA 6.5)

Solenoid-operated diaphragm valves provide slow opening and fast closing for controlling fuel gases.

- Close firmly with diaphragm that is both weight and spring loaded.
- Close on power failure; recommended for final shutoff service.
- Set opening time with various sized bleed orifices or adjustable bleed valve.
- Use with LP, natural or manufactured gases.
- Made with cast aluminum in straight-through valve pattern.
- Optional valve position indicator available for 1-1/4 in. and larger valves.

Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ

Capacity:

cfhAGA Certified 1.0 in. pd Natural Gas cfh	m ³ /hr
4178 cfh	118.3 m ³ /hr

Current (max amps at rated Vac/Hz):

0.12 amps

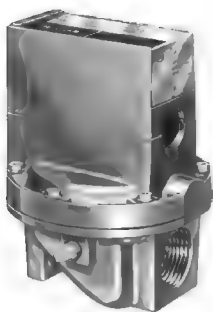
Accessories:

See chart on page 745

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time
V48F1103	2 in.	LP, natural, or manufactured	1/8-27 NPT	120 Vac	2 sec max	5 sec max

Diaphragm Gas Valves

V48J; V88J High Temperature Diaphragm Gas Valves



Solenoid-operated diaphragm valves provide slow opening and fast closing for controlling fuel gases.

- Close firmly with diaphragm that is both weight and spring loaded.
- Close on power failure; recommended for final shutoff service.
- Set opening time with various sized bleed orifices or adjustable bleed valve.
- Use with LP, natural or manufactured gases.
- Made with cast aluminum in straight-through valve pattern.
- Optional valve position indicator available for 1-1/4 in. and larger valves.

Dimension Diagrams

See diagram on page 739

Body Material: Aluminum

Electrical Terminations: 6 in. Leadwires

Frequency: 50 Hz, 60 Hz

Ground terminal: Yes

Mounting Type: Upright (horizontal)

Temperature Ratings: 32 F to 150 F (0 C to 66 C)

Pressure Ratings: 1/2 psi (3.4 kPa)

Pilot Tapping: 1/8-27 NPT

Power Consumption: 15 VA max, 9 W

Valve pattern: Straight-through

Approvals:

Canadian Standards Association: Certificate No.

158158-2500005576 (Z21.21-CSA 6.5)

Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ

Capacity:

	AGA Certified 1.0 in. pd Natural Gas cfh	m ³ /hr
3/4 in.	668 cfh	18.9 m ³ /hr
1 in.	1021 cfh	28.9 m ³ /hr
1 1/4 in.	2100 cfh	59.5 m ³ /hr
1 1/2 in.	2400 cfh	67.9 m ³ /hr
2 in.	4178 cfh	118.3 m ³ /hr

Current (max amps at rated Vac/Hz):

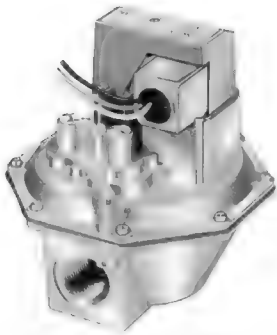
V48J	0.13 amps, 0.10 amps
V88J	0.62 amps

Accessories:

See chart on page 745

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time	Replacement Parts
V48J1005	3/4 in.	LP, natural, or manufactured	1/8-27 NPT	110 Vac, 120 Vac	1 sec max	5 sec max	139937 Coil
V48J1013	1 in.	LP, natural, or manufactured	1/8-27 NPT	110 Vac, 120 Vac	1 sec max	5 sec max	139937 Coil
V48J1021	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	110 Vac, 120 Vac	1 sec max	5 sec max	139937 Coil
V48J1039	1 1/2 in.	LP, natural, or manufactured	1/8-27 NPT	110 Vac, 120 Vac	1 sec max	5 sec max	139937 Coil
V48J1047	2 in.	LP, natural, or manufactured	1/8-27 NPT	110 Vac, 120 Vac	2 sec max	5 sec max	139937 Coil
V88J1006	1 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	118888 Coil
V88J1022	1 1/4 in.	LP, natural, or manufactured	1/8-27 NPT	24 Vac	1 sec max	5 sec max	118888 Coil

V4943; V4944; V8943; V8944 Diaphragm Gas Valves



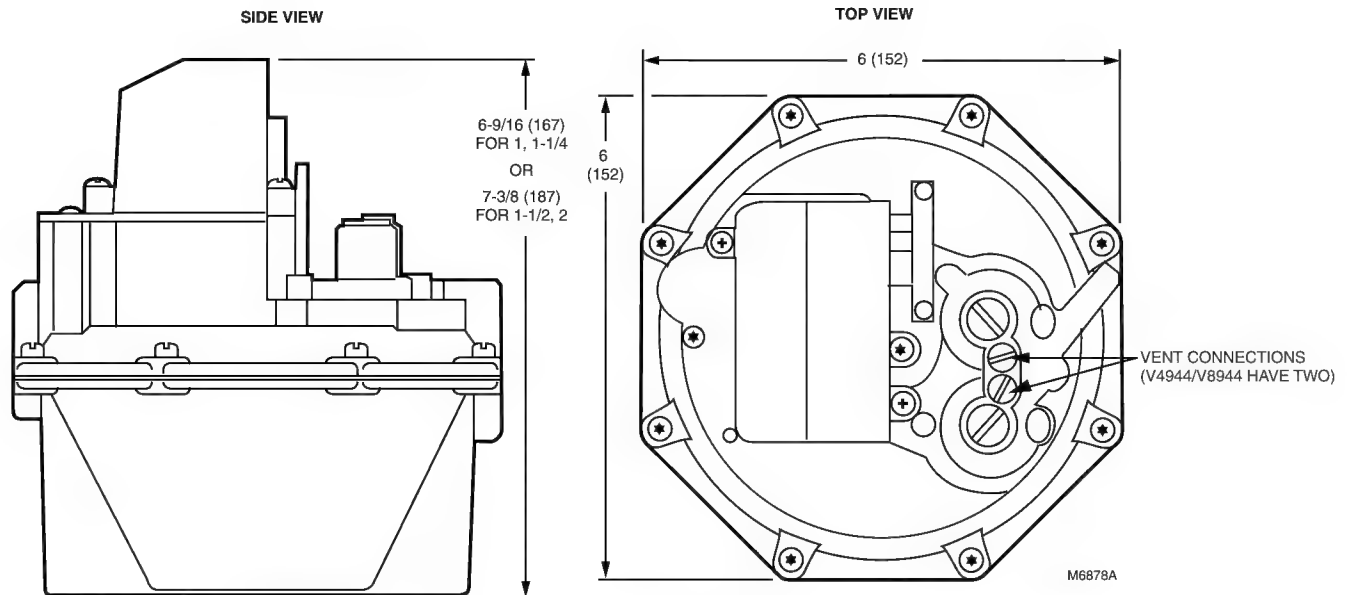
V4943/V8943A On-Off Diaphragm Gas Valves.

V4943/V8943B,C,N Single Stage Pressure Regulating Diaphragm Gas Valves.

V4944/V8944B,C,L,N Two-stage Pressure Regulating Diaphragm Gas Valves.

- Designed as replacement for V4843/V8843; V4844/V8844 Gas Valves.
- Suitable for use on atmospheric boilers, commercial water heaters, and rooftop heaters.
- V4943/V8943A models are solenoid-operated diaphragm valves for on-off flow control of fuel gases.
- V4943/V8943B,C,N and V4944/V8944B,C,L,N models are solenoid-operated diaphragm valves that combine the functions of safety shutoff and pressure regulation in a single unit.
- V4943/V8943B,N and V4944/V8944B,N are for use with natural gas.
- V4943/V8943C and V4944/V8944C,L are for use with LP gas.
- Valve body of die-cast aluminum with a straight-through pattern.
- V4943 are used with line voltage, two-wire thermostats or controllers; V8943 are used with 24 Vac thermostats or controllers.
- V4944 are used with line voltage, dual-stage thermostats or controllers; V8944 are used with 24 Vac dual-stage thermostats or controllers.
- Valve closes on power failure; recommended for final shutoff service.

Dimension Diagrams



Body Material: Aluminum

Electrical Terminations: 1/4 in. (6 mm) spade terminals (quick-connects). 30 in. (762 mm) leadwires and cover for electrical conduit connection provided.

Frequency: 60 Hz

Ground terminal: —

Mounting Type: Upright (horizontal)

Temperature Ratings: -40 F to 150 F (-40 C to 66 C)

Pressure Ratings: 1/2 psi (3.4 kPa)

Pilot Tapping: 1/8-27 NPT

Power Consumption: 6.6 VA

Valve pattern: Straight-through, non-offset

Approvals:

Canadian Standards Association: Certificate No. 158158-1042930, Guide No. 3371-03, 83 (Z21.21, Z21.78)

Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ (60 Hz only)

Regulator Setpoints:

Type of Gas	Adjustable Range		Factory Setting	
	Low Fire	High Fire	Low Fire	High Fire
LP	1.4 in. wc to 4.2 in. wc	8.8 in. wc to 11.5 in. wc	1.4 in. wc	10.0 in. wc
Natural	0.8 in. wc to 2 in. wc	3 in. wc to 4.5 in. wc	0.8 in. wc	3.5 in. wc

Capacity:

Pipe size (in.)	AGA Certified 1.0 in. pd Natural Gas cfh	m ³ /hr
1 1/2 in.	780 cfh to 2300 cfh	22 m ³ /hr to 65 m ³ /hr
1 1/4 in.	480 cfh to 1600 cfh	13.6 m ³ /hr to 45.3 m ³ /hr
1 in.	300 cfh to 1000 cfh	8.5 m ³ /hr to 28.3 m ³ /hr
2 in.	870 cfh to 3000 cfh	24.6 m ³ /hr to 84.9 m ³ /hr

Current (max amps at rated Vac/Hz):

V4943	0.055 amps
V4944	0.077 amps
V8943	0.33 amps
V8944	0.5 amps

Accessories:

See chart on page 745

Diaphragm Gas Valves

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time	Valve Type
V4943A1011	1 in.	natural and LP	Internal Bleed	120 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V4943B1019	1 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V4943N1012	1 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V4944B1018	1 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V4944B1059	1 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V4944L1016	1 in.	LP	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4944N1011	1 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4944N1052	1 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V8943A1012	1 in.	natural and LP	Internal Bleed	24 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V8943B1010	1 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943C1018	1 in.	LP	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943N1013	1 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V8944B1019	1 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944C1017	1 in.	LP	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944L1017	1 in.	LP	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V8944N1012	1 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4943A1029	1 1/4 in.	natural and LP	Internal Bleed	120 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V4943B1027	1 1/4 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V4943N1020	1 1/4 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V4944B1026	1 1/4 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V4944L1024	1 1/4 in.	LP	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4944N1029	1 1/4 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4944N1060	1 1/4 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V8943A1020	1 1/4 in.	natural and LP	Internal Bleed	24 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V8943B1028	1 1/4 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943C1026	1 1/4 in.	LP	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943N1021	1 1/4 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V8944B1027	1 1/4 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944C1025	1 1/4 in.	LP	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944L1025	1 1/4 in.	LP	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V8944N1020	1 1/4 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4943A1037	1 1/2 in.	natural and LP	Internal Bleed	120 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V4943B1035	1 1/2 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V4943N1038	1 1/2 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V4944B1034	1 1/2 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V4944N1037	1 1/2 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V8943A1038	1 1/2 in.	natural and LP	Internal Bleed	24 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V8943B1036	1 1/2 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943N1039	1 1/2 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V8944B1035	1 1/2 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944C1033	1 1/2 in.	LP	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944N1038	1 1/2 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening
V4943A1045	2 in.	natural and LP	Internal Bleed	120 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V4943B1043	2 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V4943N1046	2 in.	Natural	5/16-24 UNF	120 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V4944B1042	2 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V4944N1045	2 in.	Natural	Two 5/16-24 UNF	120 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening

Diaphragm Gas Valves

Product Number	Pipe size (in.)	Type of Gas	Bleed Tapping	Power Supply (Vac)	Valve Closing Time	Valve Opening Time	Valve Type
V8943A1046	2 in.	natural and LP	Internal Bleed	24 Vac	3 sec max	6 sec max	On-Off, Rapid Opening
V8943B1044	2 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Single-Stage, Slow Opening
V8943N1047	2 in.	Natural	5/16-24 UNF	24 Vac	2 sec max	6 sec max	Single-Stage, Rapid Opening
V8944B1043	2 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	3 sec to 25 sec	Two-Stage, Slow Opening
V8944N1046	2 in.	Natural	Two 5/16-24 UNF	24 Vac	2 sec max	6 sec max	Two-Stage, Rapid Opening

Replacement Parts or Accessories

OS Number	Description	Used With
116930	Replacement Coil	V88A
116931	Replacement Coil, 120Vac,60Hz	V48A
116932	Replacement Coil, 220-240Vac,50/60Hz	V48A
118888	24V 60 Hz Replacement Coil	V88J
139937	Replacement coil , 120Vac, 60Hz	V48J
195171	Replacement Coil, 24Vac, 50Hz	V88
204480	Regulator vent pipe fitting to be used with V4843/V8843B,C,L,N and V4844/V8844B,C,L,N and V4943/V8943, V4944/V8944	V4843, V4844, V8844, V4943, V8943, V4944, V8944
122160	Orifice- .018"	V48, V88
124674	Orifice- .011"	V48, V88

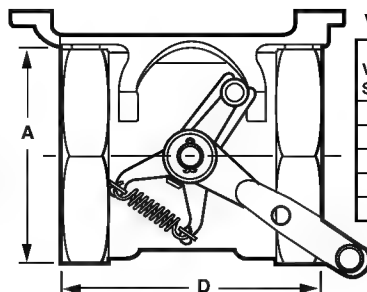
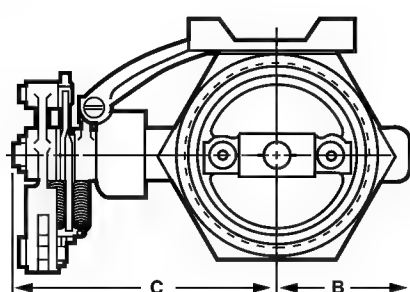
Firing Rate Gas Valves

V51E Butterfly Gas/Air Valve



Provides modulating control of natural, manufactured, LP gases or air.

Dimension Diagrams



V51E DIMENSIONS

VALVE SIZE (in.)	A ¹		B ¹		C ²		D ¹	
	in.	mm	in.	mm	in.	mm	in.	mm
1 1/2	2 21/32	67.5	1 9/16	39.7	4 1/4	108.0	3 1/32	77.0
2	3 5/32	80.2	1 13/16	46.0	4 1/4	108.0	3 17/32	89.7
2 1/2	3 27/32	97.6	2 5/16	58.7	4 13/16	122.2	4 23/32	119.9
3	4 1/32	102.4	2 25/64	60.7	5	127.0	4 23/32	119.9
4	5 21/64	135.3	3 5/32	80.2	5 3/8	136.5	5 17/64	133.8

¹ MAXIMUM DIMENSIONS.

² NOMINAL DIMENSIONS.

M9532

Body Material: Aluminum

Valve pattern: Straight-through

Mounting: Motor shaft horizontal

Temperature Ratings: 32 F to 140 F (0 C to 60 C)

Approvals:

Underwriters Laboratories, Inc: File no. MH5968 Vol. 1 Sec. 1, Guide no. MHKZ

Accessories:

Q100B1006 Linkage- Connects Modutrol motor to V51E Butterfly Valve.

Product Number	Type of Gas	Capacity		Pipe Size		Pressure Ratings	
		cfh	m ³ /hr	(inch)	(mm)	(psi)	(kPa)
V51E1000	Air, natural, manufactured, and LP	4200 cfh	118.9 m ³ /hr	1 1/2 in.	38 mm	5 psi	34.5 kPa
V51E1018	Air, natural, manufactured, and LP	9210 cfh	260.7 m ³ /hr	2 in.	51 mm	5 psi	34.5 kPa
V51E1034	Air, natural, manufactured, and LP	8390 cfh	199.8 m ³ /hr	2 1/2 in.	64 mm	5 psi	34.5 kPa
V51E1059	Air, natural, manufactured, and LP	14640 cfh	414.5 m ³ /hr	3 in.	76 mm	5 psi	34.5 kPa
V51E1075	Air, natural, manufactured, and LP	33000 cfh	934.2 m ³ /hr	4 in.	101 mm	5 psi	34.5 kPa

Firing Rate Gas Valve Parts

OS Number	Description
127413	Bracket for 2 in. V51E butterfly valve for use with Modutrol Motor
127415	Bracket, 2-1/2 in. For V51E for use with Modutrol Motor
32003396-001	V51E mounting bracket for 1-1/2 in. And 2 in. Valves for use with ML7999 actuator.
32003396-002	V51E mounting bracket for 2-1/2 in. - 4 in. Valves for use with ML7999 actuator.
4074EJU	Bag Assembly inclding mounting bracket for V51E1216
49085B	Strain Release Assembly for V51E
15271/0021	Toggle for V51E.
16350/0021	Actuating pin for V51E
16351/0021	Pin relief operating arm for V51
49084/0021	Adjusting arm for V51E.
49087/0638	Spring for V51E.
49090/0020	Yoke pin-for mounting actuating arm to linkage V51E
49095/0021	Steel washer for V51E
80897BC/0021	Stop screws for stop bracket for V51E. Two required.

Selection Chart: V5055 and V5097 Industrial Gas Valves with V4055, V4062 or V9055 Fluid Power Actuators

The chart below describes every model of V5055 or V5097 Valve in the left column, and every model of Fluid Power Actuator across the top. While it's possible to combine any valve with any actuator, we've marked the recommended valve/actuator combinations which cover most applications with a ●.

Each valve described in the left column is available:

- in these sizes: 3/4 to 3 in. (NPT or parallel BSP). V5055A,B,C are also available in 4 in. size (flange connection only).
 - With upstream and/or downstream tap.
- Options available on some Fluid Power Actuators include:
- Damper arm shaft, with or without spring return.
 - NEMA 4 enclosure.

- Fast or slow open time (13 or 26 seconds).
- Auxiliary switch.
- Valve seal overtravel interlock switch.

The Q5055A Adapter Assembly is available for adapting ITT General V710 gas valve to accept Honeywell gas valve actuators (V4055, V4062 and V9055) as replacements for ITT General AH2, AH4, AH8 gas valve actuators. Refer to Index for specific page number of Q5055A.

For complete specifications and ordering information on V5055 and V5097 Valves and V4055, V4062 and V9055 Fluid Power Actuators, refer to Index for specific page numbers.

Valve	Actuator									
	V4055A On-Off Lo Press.	V4055B On-Off Hi Press.	V4055D On-Off Lo Press. Valve Seal Overtravel Interlock	V4055E On-Off Hi Press. Valve Seal Overtravel Interlock	V4055F Manual Reset Safety Shutoff Valve Seal Overtravel Interlock	V4055G Manual Reset	V4062A Hi-Lo-Off Lo Press.	V4062D Modulating Lo Press. Valve Seal Overtravel Interlock	V9055A Modulating Lo Press.	V9055D Modulating Lo Press. Valve Seal Overtravel Interlock
V5055A, V5097A On-Off Lo Pressure	●	● ^b				●				
V5055B, V5097B Lo Pressure Characterized Guide ^a	●	● ^b				●	●		●	
V5055C, V5097C Lo Pressure Double Seal ^c			●	● ^b	●			●		●
V5055D, V5097D On-Off Hi Pressure	● ^b	●								
V5055E, V5097E Hi Pressure Double Seal ^c			● ^b	●				● ^b		● ^b

^a Provides a predictable relationship between stem travel and gas flow.

^b See next page for higher opening and close-off ratings for these combinations.

^c Use with actuators having valve seal overtravel interlock

VALVE ACTUATOR APPROVALS:

The following combinations of V5055 and V5097 Valves, and V4055, V4062 and V9055 Fluid Power Actuators are approved by these agencies.

UNDERWRITERS LABORATORIES INC. LISTED: MH1639

V4055A/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
V4055B/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
V4055D/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
V4055E/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
V4055F/V5055A-E (3/4-4 in.^a) or V5097A-E (3/4-3 in.).
V4055G/V5055A-E (3/4-4 in.^a) or V5097A-E (3/4-3 in.).
V4062A,D/V5055A-E (3/4-4 in.) or V5097A-E (3/4-3 in.).
V9055A,D/V5055A,B,C,E (3/4-4 in.) or V5097A-E (3/4-3 in.).

CANADIAN GAS ASSOCIATION CERTIFIED: Report No.1209-SSV-5965-60 Hz models only.

VALVE-ACTUATOR PRESSURE RATINGS:

Valve	Actuator											
	V4055A,D ^a				V4055B,E ^a				V4062, V9055 ^a			
	Diff. ^b		Close-Off ^c		Diff. ^b		Close-Off ^c		Diff. ^b		Close-Off ^c	
	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa
V5055A,C and V5097A,C (3/4 to 3 in.)	5	34.5	15	103.4	15	103.4	15	103.4	5	34.5	15	103.4
V5055A,C (4 in.)	3	20.7	15	103.4	5	34.5	15	103.4	3	20.7	15	103.4
V5055B and V5097B (3/4 to 3 in.)	5	34.5	15	103.4	15	103.4	15	103.4	5	34.5	15	103.4
V5055B (4 in.)	3	20.7	15	103.4	5	34.5	15	103.4	3	20.7	15	103.4
V5055D,E and V5097D,E (3/4, 1, 1-1/4, 1-1/2 in.)	5	34.5	75	517.1	25	172.4	75	517.1	5	34.5	75	517.1
V5055D,E and V5097D,E (2, 2-1/2, 3 in.)	5	34.5	45	310.3	15	103.4	45	310.3	5	34.5	45	310.3

^a Use a V4055D, V4055E, V4062D or V9055D (with valve-closed indication switch) with a V5055C,E or V5097C,E (with double seal) for a Valve Seal Overtravel Interlock.

^b Maximum operating pressure differential.

^c Maximum close-off pressure without seal leakage. This is the maximum allowable pressure drop to which a valve may be subjected while fully closed, and is independent of the valve body rating.

Fluid Actuators

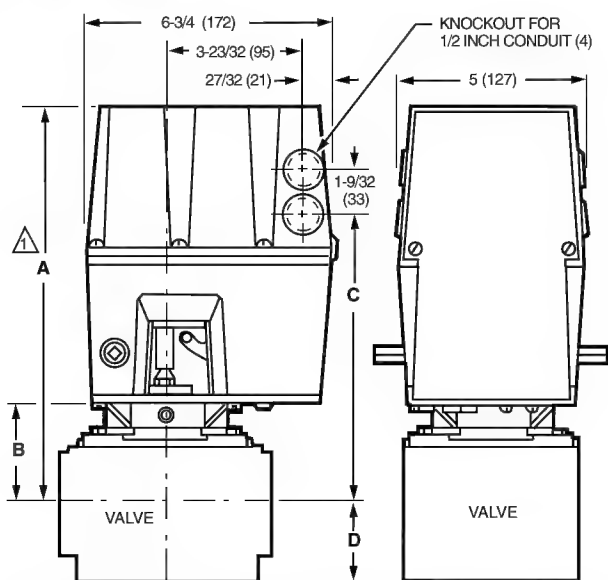
V4055A,B,D,E On-Off Fluid Power Gas Valve Actuator



Use with V5055 Valve to control gas supply to commercial and industrial burners.

- Use where smooth lightoff is important.
- One-second maximum closing time.
- Always displays the valve position, when open a red indicator appears and closed a yellow indicator appears.
- Mount in any position directly to valve bonnet with three setscrews.
- Provide final safety shutoff service when used with V5055 valve.

Dimension Diagrams



△ ALLOW 4 INCH (102 MM) CLEARANCE FOR ACTUATOR REMOVAL. M17755

Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

Contact Ratings:

Auxiliary Switch		Proof of Closure (Factory Mutual) Switch	
120 Vac	120 Vac	120 Vac	120 Vac
9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp	9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp

Accessories:

7616BR Crank Arm assembly with clip for Damper Arm of V4055, V4062 or V9055

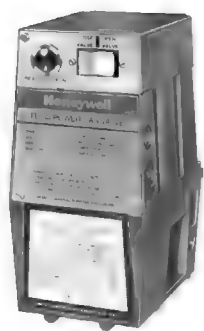
Product Number	Damper Shaft	Electrical Ratings (Vac)	Electrical Ratings (Hz)	Installed Switches		Maximum Operating Pressure	Timing		Description	Comments
				Auxiliary	Proof of Closure		Closing < 1 sec	Opening		
V4055A1007	No	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1031	No	120 Vac	60 Hz	No	No	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1064	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1080	Yes	240 Vac	60 Hz	No	No	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1098	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1114	Yes	240 Vac	60 Hz	No	No	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1296	No	120 Vac	60 Hz	Yes - adjusted to 90 degree stroke	No	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—

Fluid Actuators

Product Number	Damper Shaft	Electrical Ratings (Vac)	Electrical Ratings (Hz)	Installed Switches		Maximum Operating Pressure	Timing		Description	Comments
				Auxiliary	Proof of Closure		Closing < 1 sec	Opening		
V4055A1304	Yes with return spring installed.	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	—
V4055A1312	No	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907A,B valve bodies. Low pressure.	Nema 4 Enclosure
V4055B1021	Yes	120 Vac	60 Hz	No	No	15 or 25 psi	Yes	26 sec	ON-OFF actuator. Normally used with 4 in. V5055/V5097A,B and all V5055D valve bodies. High pressure.	—
V4055B1039	Yes	120 Vac	60 Hz	No	No	15 or 25 psi	Yes	13 sec	ON-OFF actuator. Normally used with 4 in. V5055/V5097A,B and all V5055D valve bodies. High pressure.	—
V4055D1001	Yes	120 Vac	60 Hz	No	Yes	5 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	—
V4055D1019	Yes	120 Vac	60 Hz	No	Yes	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	—
V4055D1027	No	120 Vac	60 Hz	Yes	Yes	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	Nema 4 Enclosure
V4055D1035	No	120 Vac	60 Hz	Yes	Yes	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	—
V4055D1043	No	120 Vac	60 Hz	No	Yes	5 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	—
V4055E1016	Yes	120 Vac	60 Hz	No	Yes	15 or 25 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	—
V4055E1024	Yes	120 Vac	60 Hz	Yes	Yes	15 or 25 psi	Yes	26 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	Nema 4 Enclosure
V4055E1040	Yes	120 Vac	60 Hz	No	Yes	15 or 25 psi	Yes	13 sec	ON-OFF actuator. Normally used with V5055/V5907C valve bodies. Low pressure.	Nema 4 Enclosure

Fluid Actuators

V4055F,G Manual Reset Safety Shut-off Gas Valve Actuators



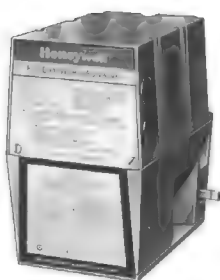
- Provide manual reset, safety shut-off functions as required on FM, IHEA-IRI and NFPA 86A,B,C industrial furnaces, ovens and kilns.
- Close in one second maximum.
 - Continuously displays the valve position with a red indicator when closed.
 - Mount directly to valve bonnet with three setscrews.

Temperature Ratings: -40 F to +150 F (-40 C to +66 C)
Contact Ratings:

Proof of Closure (Factory Mutual) Switch	
120 Vac	120 Vac
9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp

Product Number	Damper Shaft	Electrical Ratings (Vac)	Electrical Ratings (Hz)	Installed Switches		Maximum Operating Pressure	Timing		Description
				Auxiliary	Proof of Closure		Closing < 1 sec	Opening	
V4055F1006	No	120 Vac	60 Hz	No	Yes	5 psi	Yes	13 sec	Manual reset safety shutoff valve with proof of closure switch.
V4055G1004	No	120 Vac	60 Hz	No	No	5 psi	Yes	13 sec	Manual reset safety shutoff valve.

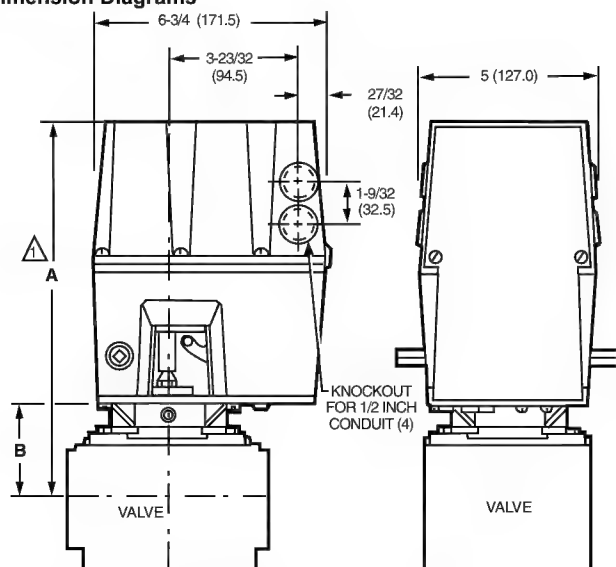
V4062 Off-Lo-Hi Fluid Power Gas Valve Actuators



Control gas supply for commercial and industrial burners. Valve opens to low fire position when power is applied; valve opens all the way on demand.

- Provide final safety shutoff service when used with V5055 valve.
- One-second maximum closing time.
- Continuously displays the valve position with a red indicator when open and a yellow indicator when closed.
- Mount in any position directly to valve bonnet with three setscrews.
- Use with Q5055A Adapter Assembly to replace ITT General V710 gas valves.

Dimension Diagrams



△ ALLOW 4 IN. (101.6 MM) CLEARANCE FOR ACTUATOR REMOVAL.

VALVE SIZE INCH	V5055				V5097			
	DIM A		DIM B		DIM A		DIM B	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	282.6	2-3/4	69.9	11-1/8	283	2-3/4	70
1	11-1/8	282.6	2-3/4	69.9	11-1/8	283	2-3/4	70
1-1/4	11-1/8	282.6	2-3/4	69.9	11-1/8	283	2-3/4	70
1-1/2	11-1/8	282.6	2-3/4	69.9	11-1/8	283	2-3/4	70
2	11-1/4	285.8	2-7/8	73.0	11-3/4	298	3-3/8	86
2-1/2	11-3/4	298.5	3-3/8	85.7	11-3/4	298	3-3/8	86
3	11-3/4	298.5	3-3/8	85.7	11-3/4	298	3-3/8	86
4	14-1/8	358.8	5-13/16	147.6	—	—	—	—

M10981

Temperature Ratings: -40 F to +150 F (-40 C to +66 C)

Contact Ratings:

Auxiliary Switch		Proof of Closure (Factory Mutual) Switch	
120 Vac	120 Vac	120 Vac	120 Vac
9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp	9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp

Accessories:

7616BR Crank Arm assembly with clip for Damper Arm of V4055, V4062 or V9055

Product Number	Damper Shaft	Electrical Ratings (Vac)	Electrical Ratings (Hz)	Installed Switches		Maximum Operating Pressure	Timing		Description
				Auxiliary	Proof of Closure		Closing < 1 sec	Opening	
V4062A1008	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.
V4062A1123	Yes with return spring installed.	120 Vac	60 Hz	Yes	No	5 psi	Yes	26 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.
V4062A1131	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	13 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.
V4062A1156	No	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.
V4062A1198	Yes with return spring installed.	120 Vac	60 Hz	Yes - adjusted to 90 degree stroke	No	5 psi	Yes	13 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.
V4062D1010	Yes	120 Vac	60 Hz	No	Yes	5 psi	Yes	13 sec	HI-LO-OFF actuator for use with V5055B and V5097B valve bodies. Low pressure.

Fluid Actuators

V9055 Modulating Fluid Power Gas Valve Actuators



Control gas supply for commercial and industrial burners. Valve opens to low fire position when power is applied, then modulates to meet firing rate controller demand.

- Include intergal shaft to drive combustion air damper in unison with valve.
- One-second maximum closing time.
- Always display the valve position, when open a red indicator appears and closed a yellow indicator appears.
- Mount in any position directly to valve bonnet with three setscrews.
- Use with Q5055A Adapter Assembly to replace ITT General Actuators on ITT General V710 gas valves.

Temperature Ratings: -40 F to +125 F (-40 C to +52 C)

Approvals:

Contact Ratings:

Proof of Closure (Factory Mutual) Switch	
120 Vac	120 Vac
9.8 AFL, 58.8 ALR, 1/2 hp	4.9 AFL, 29.4 ALR, 1/2 hp

Accessories:

203422C 4-20 ma Adapter for V9055

7616BR Crank Arm assembly with clip for Damper Arm of V4055, V4062 or V9055

Product Number	Damper Shaft	Electrical Ratings (Vac)	Electrical Ratings (Hz)	Installed Switches		Maximum Operating Pressure	Timing		Description	Comments
				Auxiliary	Proof of Closure		Closing < 1 sec	Opening		
V9055A1055	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	Modulating-OFF actuator for use with V5055B valve bodies. Low pressure.	—
V9055A1063	Yes	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	Modulating-OFF actuator for use with V5055B valve bodies. Low pressure.	Nema 4 Enclosure
V9055A1113	Yes with return spring installed.	120 Vac	60 Hz	No	No	5 psi	Yes	26 sec	Modulating-OFF actuator for use with V5055B valve bodies. Low pressure.	—
V9055D1000	Yes	120 Vac	60 Hz	No	Yes	5 psi	Yes	26 sec	—	—

Fluid Actuator Accessories and Parts

OS Number	Description	Used With
118778	Damper Arm Spring Return (L.H.) for V4055, V4062 or V9055	V9055, V4055, V4062
118779	Damper Arm Spring Return (R.H.) for V4055, V4062 or V9055	V9055, V4055, V4062
118846	Brass Tubing When adding Spring Return, for V4055, V4062 or V9055	V9055, V4055, V4062
130618	Replacement clip for damper shaft on V4055, V4062 or V9055	V9055, V4055, V4062
133568	Adjustable Valve Position Indicator Switch for V4055, V4062 or V9055	V9055, V4055, V4062
133569	Replacement Valve Closed Position Indicator Switch for V4055, V4062 or V9055	V9055, V4055, V4062
135796	Adjustment Wrench for V4062	V4062
203422C	4-20 ma Adapter for V9055	V4062, V9055
7616BR	Crank Arm assembly with clip for Damper Arm of V4055, V4062 or V9055	V9055, V4055, V4062

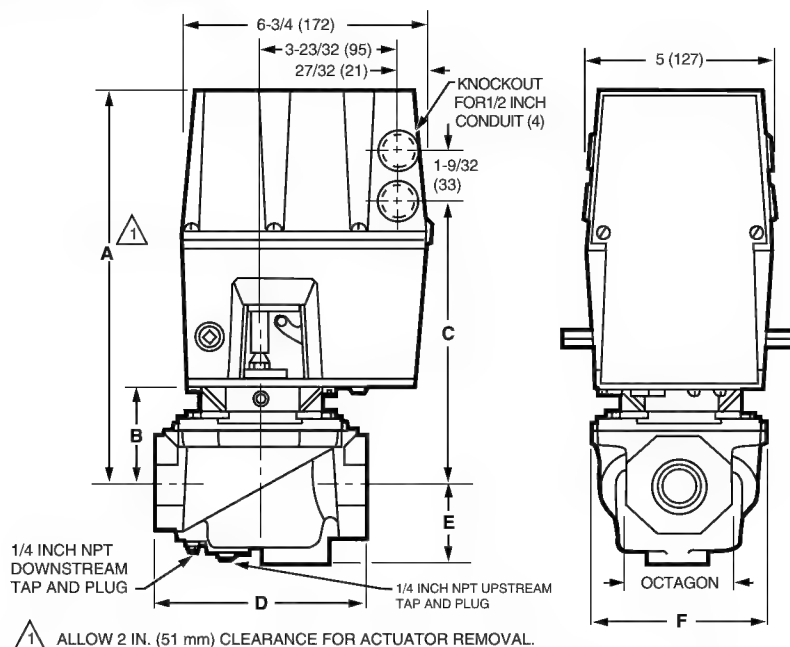
V5055 Industrial Gas Valves



Safety shutoff valves used with V4055, V4062 and V9055 fluid power actuators to control gas flow to commercial and industrial burners.

- Use with natural or LP gases.
- Mount directly in gas supply line.
- Include 1/4 in. NPT upstream and downstream taps and plug; 4 in. models have only flanged connections.
- V5055 normally closed valves are rated for final shutoff service (safety shutoff).
- V5055A,C,D,E Valves are for On-Off service.
- V5055B Valve has a characterized guide and in combination with the V4055, V4062, and V9055 Fluid
- Power Actuators, provides slow-opening, hi-lo-off, and modulating functions respectively.
- V5055C,E,F Valves have a double seal and are used with V4055D,E Actuators to provide proof-of-closure switch and valve seal overtravel interlock.
- V5055D,E,F Valves are for high pressure applications.

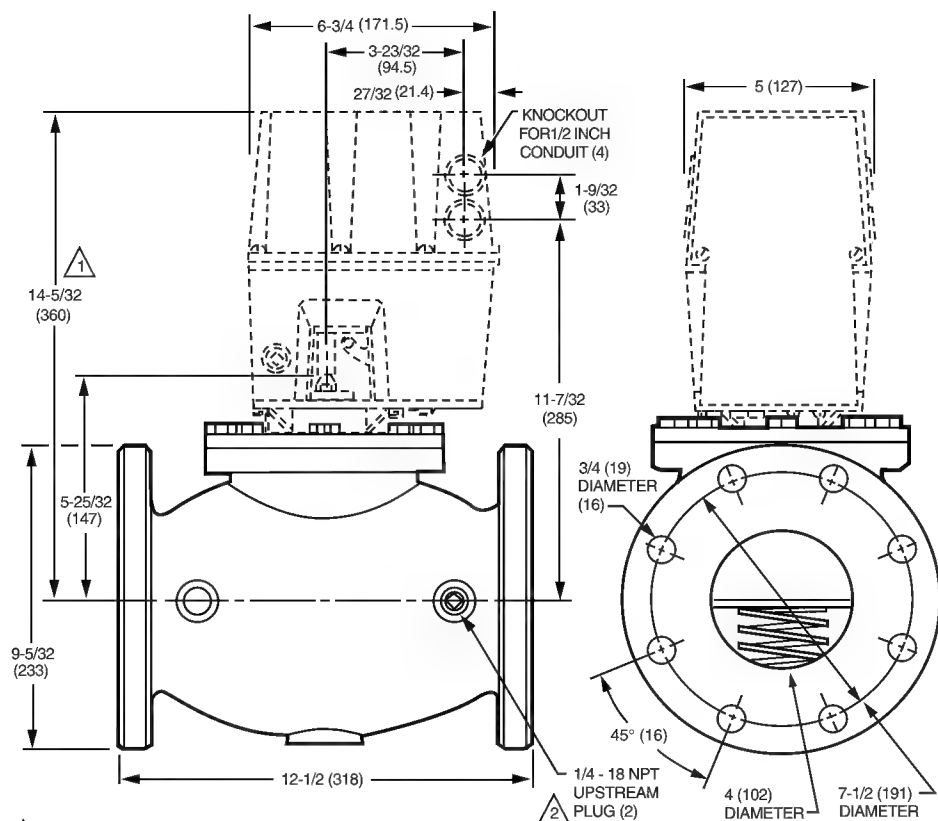
Dimension Diagrams



VALVE SIZE INCH	DIM A		DIM B		DIM C		DIM D		DIM E		DIM F		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/4	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
1-1/2	11-1/8	282.6	2-3/4	69.9	8-3/16	208.0	5-3/4	146.1	2-1/4	57.2	4-13/16	122.2	2-13/16	71.4
2	11-1/4	285.8	2-7/8	73.0	8-5/16	211.1	8-3/8	212.7	2-3/4	69.9	7-19/32	192.9	3-1/2	88.9
2-1/2	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3
3	11-3/4	298.5	3-3/8	85.7	8-13/16	223.8	9-1/4	235.0	2-3/4	69.9	7-19/32	192.9	4-1/2	114.3

M9585

Industrial Gas Valves



1 ALLOW 2 IN. (51 mm) CLEARANCE ABOVE V4055 SO IT MAY BE REMOVED FROM VALVE.

2 DIMENSIONS ON DIN-APPROVED VALVES: 1/4 - 19 BSP.PL UPSTREAM PLUG (2), .71 IN (18 mm) DIAMETER BOLT HOLE (16), 7.087 IN (180 mm) DIAMETER BOLT CIRCLE.

M9584

Operating Temperature Range: -40 F to 150 F (-40 C to 66 C)

Temperature Ratings when used with V9055: -40 F to 125 F (-40 C to 52 C)

Approvals:

Canadian Standards Association: Certificate No. 158158-1205788, Guide No. 3371-04, 3371-84

Factory Mutual: 1D9A2.AF

Industrial Risk Insurers: Acceptable (used with V4055A,B,D,E, V4062, V9055)

Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ (used with V4055A,B,D,E, V4062, V9055)

Product Number	Pipe size (in.)	Pipe Thread	Capacity	Maximum Operating Differential Pressure		Description	Includes	Comments
				V4055A,D; V4062	V4055B or E			
V5055A1004	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug 1/4 in. -18 NPT downstream tap and plug	—
V5055A1012	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug 1/4 in. -18 NPT downstream tap and plug	—
V5055A1020	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug 1/4 in. -18 NPT downstream tap and plug	—
V5055A1038	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug 1/4 in. -18 NPT downstream tap and plug	—
V5055A1046	2 1/2 in.	NPT	4250 cf/hr; 120 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug 1/4 in. -18 NPT downstream tap and plug	—

Product Number	Pipe size (in.)	Pipe Thread	Capacity	Maximum Operating Differential Pressure		Description	Includes	Comments
				V4055A,D; V4062	V4055B or E			
V5055A1053	3 in.	NPT	5230 cf/hr; 148 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055A1228	4 in.	Flanged	10200 cf/hr; 288.8 m ³ /hr	3 psi (20.7 kPa)	5 psi (34.5 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055A1343	3/4 in.	NPT	665 cf/hr; 18.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1002	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1010	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1028	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1069	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1077	2 1/2 in.	NPT	4250 cf/hr; 120 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1085	3 in.	NPT	5230 cf/hr; 148 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1150	4 in.	Flanged	9180 cf/hr; 259.9 m ³ /hr	3 psi (20.7 kPa)	5 psi (34.5 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055B1234	3/4 in.	NPT	665 cf/hr; 18.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1000	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—

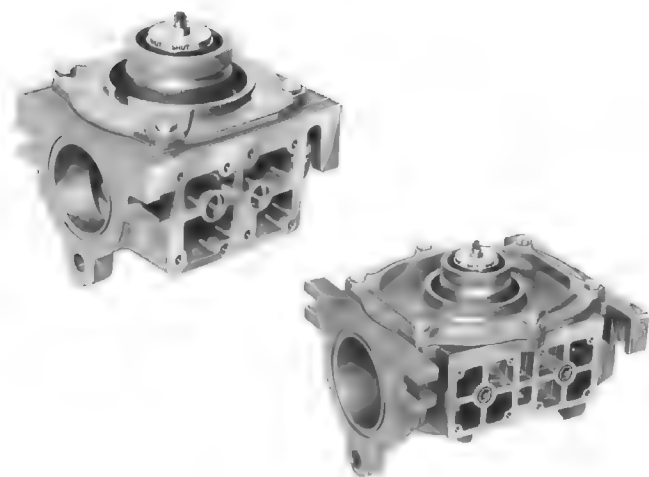
Industrial Gas Valves

Product Number	Pipe size (in.)	Pipe Thread	Capacity	Maximum Operating Differential Pressure		Description	Includes	Comments
				V4055A,D; V4062	V4055B or E			
V5055C1018	2 1/2 in.	NPT	4250 cf/hr; 120 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1026	3 in.	NPT	5230 cf/hr; 148 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1034	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1042	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1059	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1109	4 in.	Flanged	9180 cf/hr; 259.9 m ³ /hr	3 psi (20.7 kPa)	5 psi (34.5 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055C1182	3/4 in.	NPT	665 cf/hr; 18.8 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1008	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1016	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1024	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1032	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1040	2 1/2 in.	NPT	4250 cf/hr; 120 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1057	3 in.	NPT	5230 cf/hr; 148 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055D1065	3/4 in.	NPT	665 cf/hr; 18.8 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—
V5055E1005	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. -18 NPT downstream tap and plug	—

Product Number	Pipe size (in.)	Pipe Thread	Capacity	Maximum Operating Differential Pressure		Description	Includes	Comments
				V4055A,D; V4062	V4055B or E			
V5055E1013	2 1/2 in.	NPT	4250 cf/hr; 120 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055E1021	3 in.	NPT	5230 cf/hr; 148 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055E1039	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055E1047	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055E1054	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055E1062	3/4 in.	NPT	665 cf/hr; 18.8 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	—
V5055F1003	1 in.	NPT	960 cf/hr; 27.2 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	Meets Intent of DIN Seat Leakage Requirements
V5055F1011	1 1/2 in.	NPT	1717 cf/hr; 48.6 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	Meets Intent of DIN Seat Leakage Requirements
V5055F1029	2 in.	NPT	3620 cf/hr; 102.5 m ³ /hr	5 psi (34.5 kPa)	15 psi (103.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	Meets Intent of DIN Seat Leakage Requirements
V5055F1037	1 1/4 in.	NPT	1406 cf/hr; 39.8 m ³ /hr	5 psi (34.5 kPa)	25 psi (172.4 kPa)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel	Includes 1/4 in. -18 NPT upstream tap and plug1/4 in. - 18 NPT downstream tap and plug	Meets Intent of DIN Seat Leakage Requirements

Industrial Gas Valves

V5097 Industrial Gas Valves



Operating Temperature Range: -40 F to 150 F (-40 C to 66 C)
Temperature Ratings when used with V9055: -40 F to 125 F (-40 C to 52 C)

Includes: Three 1/4 in. -18 NPT upstream and two 1/4 in. -18 NPT downstream taps.

Comments: Select Proper Pipe Adapter

Safety shutoff valves used with V4055, V4062 and V9055 fluid power actuators to control gas flow to commercial and industrial burners.

- Use with natural or LP gases.
- Mount directly in gas supply line.
- Two Valve body types. Small body type for 3/4 in., 1 in., 1-1/4 in., 1-1/2 in., 2 in. pipes. Large body types for 2 in., 2-1/2 in. and 3 in. pipes.
- Seven pipe adapter sizes from 3/4 in. to 3 in. have NPT or BSP threaded connections.
- Provides three 1/4 in. upstream and two 1/4 in. downstream tap and plug. CE version provides an additional downstream tap and plug.
- Yellow SHUT indicator attached to the valve stem provides an indication of the valve closed position.
- V5097A,C,D,E Valves are for on-off service.
- V5097B Valve has a characterized guide and in combination with the V4055, V4062 and V9055 Fluid Power Actuators, provides slow-opening, HI-LO-OFF, and modulating functions, respectively.
- V5097C,E Valves have a double seal and are used with V4055D,E Fluid Power Actuators to provide proof-of-closure switch and valve seal overtravel interlock.
- V5097D,E Valves are for high pressure applications.
- Two valve body types (small and large) applicable to server pipe size.

Approvals:

Canadian Standards Association: Certificate No. 158158-1205788, Guide No. 3371-04, 3371-84

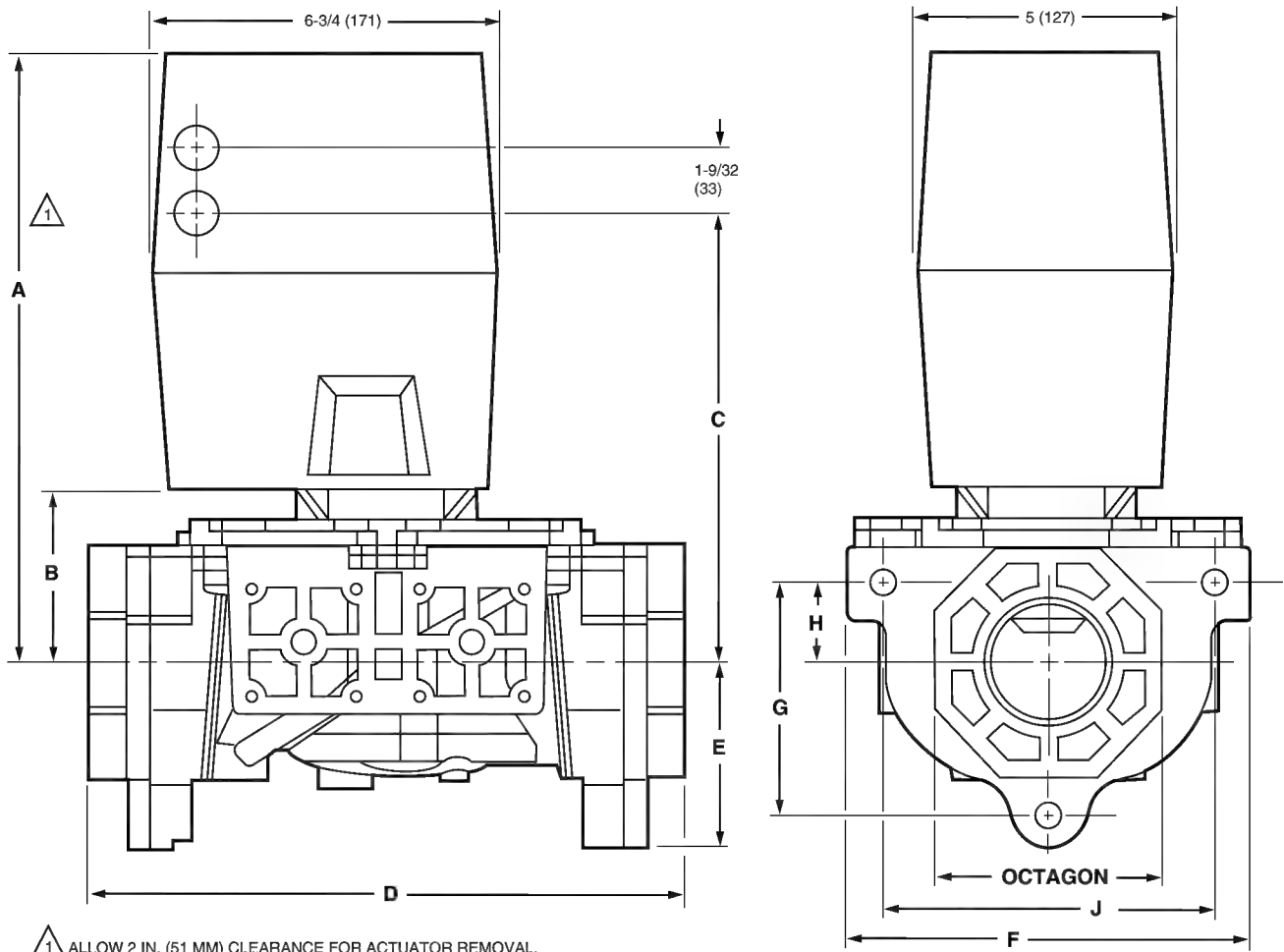
Factory Mutual: Approved: Report No. J.I.1D9A2.AF

Industrial Risk Insurers: Acceptable (used with V4055A,B,D,E, V4062, V9055)

Underwriters Laboratories, Inc: File No. MH1639, Guide No. YIOZ

Product Number	Pipe size (in.)	Integrated Valve Train Body Size	Capacity	Maximum Operating Differential Pressure		Description
				V4055A,D; V4062	V4055B or E	
V5097A1004	3/4 in. 1 in. 1 1/4 in. 2 in.	Small body	665 cf/hr to 3620 cf/hr; 18.8 to 102.5 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off
V5097A1012	2 in. 2 1/2 in. 3 in.	Large body	3620 cf/hr to 5230 cf/hr; 102.5 to 148.0 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off
V5097B1002	3/4 in. 1 in. 1 1/4 in. 2 in.	Small body	665 cf/hr to 3620 cf/hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service
V5097B1010	2 in. 2 1/2 in. 3 in.	Large body	3620 cf/hr to 5230 cf/hr; 102.5 to 148.0 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off with characterized guide for slow opening, HI-LO-OFF, or modulating service
V5097C1000	3/4 in. 1 in. 1 1/4 in. 2 in.	Small body	665 cf/hr to 3620 cf/hr; 18.8 to 102.5 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off with Valve Seal Overtravel
V5097C1018	2 in. 2 1/2 in. 3 in.	Large body	3620 cf/hr to 5230 cf/hr; 102.5 to 148.0 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off with Valve Seal Overtravel
V5097D1008	3/4 in. 1 in. 1 1/4 in. 2 in.	Small body	665 cf/hr to 3620 cf/hr; 18.8 to 102.5 m ³ /hr	5 psi (340 mbar)	25 psi (1.6 bar)	On-off safety shut-off for high pressure applications
V5097D1016	2 in. 2 1/2 in. 3 in.	Large body	3620 cf/hr to 5230 cf/hr; 102.5 to 148.0 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off for high pressure applications
V5097E1005	3/4 in. 1 in. 1 1/4 in. 2 in.	Small body	665 cf/hr to 3620 cf/hr; 18.8 to 102.5 m ³ /hr	5 psi (340 mbar)	25 psi (1.6 bar)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel
V5097E1013	2 in. 2 1/2 in. 3 in.	Large body	3620 cf/hr to 5230 cf/hr; 102.5 to 148.0 m ³ /hr	5 psi (340 mbar)	15 psi (1 bar)	On-off safety shut-off for high pressure applications, with Valve Seal Overtravel

Dimension Diagrams



VALVE SIZE (IN.)	DIM. A		DIM. B		DIM. C		DIM. D		DIM. E		DIM. F		DIM. G		DIM. H		DIM. J		OCTAGON	
	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM
3/4	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/4	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
1-1/2	11-1/8	283	2-3/4	70	8-3/16	208	8-1/4	210	2-7/16	62	5	127	2-5/16	58	7/8	23	3-15/16	100	2-13/16	71
2	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
2-1/2	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114
3	11-3/4	298	3-3/8	86	8-5/16	211	11-3/4	298	3-5/8	91	8	203	4-7/16	113	1-1/2	38	6-1/2	165	4-1/2	114

M11682A

Industrial Gas Valves

V5055/V5097 Replacement Parts or Accessories

OS Number	Description	Used With
133393A	O-Ring Assembly for 1 in., 1 1/4 in., and 1 1/2 in. V5055/V5097 valves	V5055/V5097 valves
133398AA	Replacement Bonnet Assembly with 133393A Seal Assembly for 3/4, 1, 1-1/4, 1-1/2 in. V5055A/V5097A valves	V5055/V5097 valves
133398BA	Replacement Bonnet Assembly with 133393A Seal Assembly for 3/4, 1, 1-1/4, 1-1/2 in. V5055B/V5097B valves	V5055/V5097 valves
133398CA	Replacement Bonnet Assembly, with 137253A replacement Seal Assembly for small body (3/4, 1, 1/1/2 in.) V5055/V5097C.	V5055/V5097 valves
133417AA	Replacement Bonnet Assembly with 133392A Seal Assembly for 2, 2 1/2, and 3 in. V5055A/V5097 Large Body valves	V5055/V5097 valves
133417BA	Replacement Bonnet Assembly with 133392A Seal Assembly for 2, 2 1/2, and 3 in. V5055B/V5097B Large Body valves	V5055/V5097 valves
133417CA	Replacement Bonnet Assembly with 133392A Seal Assembly for 2, 2 1/2, and 3 in. V5055C/V5097C Large Body valves	V5055/V5097 valves
136307AA	Replacement bonnet assembly. For large body (2, 2-1/2, 3 inch) V5055D or V5097D	V5055/V5097 valves
136307BA	Replacement Bonnet Assembly with 132542 Seal Assembly for 2, 2-1/2, and 3 in. V5055E or V5097E valves	V5055/V5097 valves
136308AA	Replacement Bonnet Assembly with 133393A Seal Assembly for 3/4, 1, 1-1/4, and 1-1/2 in. V5055D valves	V5055/V5097 valves
136911AA	Replacement bonnet assembly. With 137253A replacement seal assembly. For 4 in. V5055A.	V5055/V5097 valves
136911BA	Replacement bonnet assembly. With 137253A replacement seal assembly. For 4 in. V5055B.	V5055
136911CA	Replacement bonnet assembly. With 137253A replacement seal assembly. For 4 in. V5055C.	V5055
137253A	Replacement seal assembly. For 4 inch V5055.	V5055
32002512-001	Large bodies 2 in.-3 in. normally open vent valve adapter. Use with V5097	V5097
32002513-001	Small bodies 3/4 in.-2 in. normally open vent valve adapter. Use with V5097	V5097
32004771-001	Integrated Valve Train Multi-tap Adapter, Small body	Integrated Valve Train
32004772-001	Integrated Valve Train Multi-tap Adapter, Large body	Integrated Valve Train
32005096-001	Screen Assembly for Multi-tap Adapter, Small body	Integrated Valve Train
32005096-002	Screen Assembly for Multi-tap Adapter, Large body	Integrated Valve Train
4074EYE	Bag assembly for V5097 (large body) includes 6 ea bolts, nuts and washers.	V5097
4074EYF	Bag assembly for V5097 (small body) includes 6 ea bolts, nuts and washers.	V5097
4074EYK	Bag assembly for V5097 (small body) includes (2) O-rings, (1) grease capsule.	V5097
4074EYL	Bag assembly for V5097 (large body) includes (2) O-rings, (1) grease capsule.	V5097

V5197 Integrated Valve Train Butterfly Gas Valve

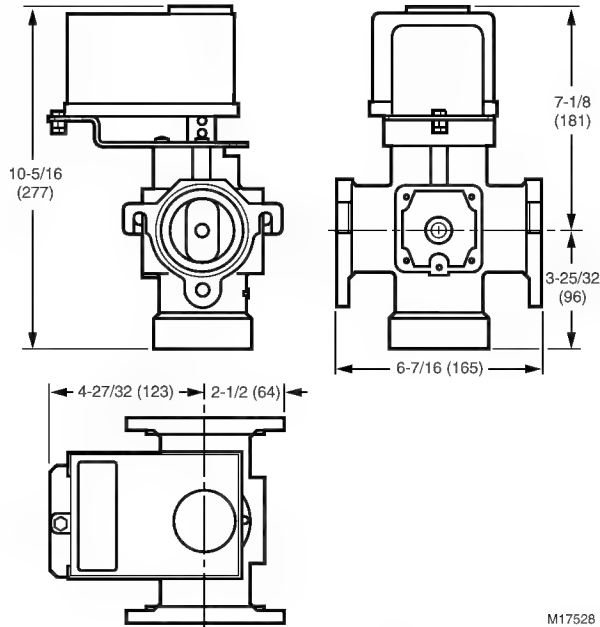


The V5197A is a firing rate valve used to provide variable flow control of air, natural gas, liquefied petroleum (LP), and manufactured gases. The V5197A is actuated by a firing rate motor that can be mounted directly on the valve. The V5197A is not applicable as a safety shutoff valve. The V5197A is specially designed to provide fine control of gas flow in applications where a high turn down ratio is required. The maximum flow adjustment screw on the bottom of the

valve allows adjusting the maximum flow of gas through the V5197 while maintaining the linear modulating characteristics and stroke. The V5197A is part of the Honeywell Integrated Valve Train System that allows gas train components to be directly bolted together.

- Used with air, natural, manufactured or liquefied petroleum (LP) gases.
- For modulating applications that do not require final shutoff service of firing rate valve.
- Two valve body types (small and large) applicable to seven pipe sizes:
- Small body type for 3/4 in. (19 mm), 1 in. (25 mm), 1-1/4 in. (32 mm), 1-1/2 in. (38 mm) and 2 in. (51 mm) pipes, NPT or ISO 7 threads.
- Large body type for 2 in. (51 mm), 2-1/2 in. (64 mm) and 3 in. (76 mm) pipes, NPT or ISO 7 threads.
- Two downstream 1/4 in. NPT threaded pressure taps available.
- Accepts C6097 Pressure Switch mounted directly to flange (downstream pressure tap only).
- Unpainted cast aluminum body.
- Suitable for electric or pneumatic operators with the appropriate linkage.
- May be used with manufacturers own linkage and drive motor.
- Flow adjustment screw on bottom of valve controls maximum flow.
- Visual position indicator.

Dimension Diagrams



Body Material: Die-cast aluminum

Temperature Ratings: -40 F to 150 F (-40 C to 66 C)

Inlet and Outlet Pressure Tapping: Two downstream 1/4 in. NPT taps

Approvals:

Canadian Standards Association: Design Certified

Industrial Risk Insurers: Acceptable

Product Number	Type of Gas	Pipe Size		Capacity		Integrated Valve Train Body Size	Mounting	Pressure Ratings	
		(inch)	(mm)	cfh	m ³ /hr			(psi)	(kPa)
V5197A1003	Air, natural, manufactured, and LP	3/4 in.	19 mm	3570 cfh for 3/4 in.	19 mm =101	Small body	Directly bolted to Integrated Valve Train (IVT) components or IVT adapters	15 psi max	1 Bar
		1 in.	25 mm	4500 cfh for 1 in.	25 mm =127				
		1 1/4 in.	32 mm	6470 cfh for 1 1/4 in.	32 mm = 183				
		1 1/2 in.	38mm	7310 cfh for 1 1/2 in.	38 mm =207				
		2 in.	51 mm	8000 cfh for 2 in.	51 mm =226				
V5197A1011	Air, natural, manufactured, and LP	2 in.	51 mm	12,600 cfh for 2 in.	51 mm=356	Large body	Directly bolted to Integrated Valve Train (IVT) components or IVT adapters	15 psi max	1 Bar
		2 1/2 in.	64 mm	14,800 cfh for 2 1/2 in.	64 mm=419				
		3 in.	76 mm	16,900 cfh for 3 in.	76 mm=478				

Integrated Valve Train

V4297 Assembled Valve Train

Integrated Valve Train Arrangement:

	First Adapter	First Valve	Vent Valve	Vent Pipe Forward or Backward	Second Valve	Second Adapter
VAAHXA1108	32000109-001	V4297A1005	None	NA	V4297A1005	32000109-001
VABHXB1004	32000109-002	V4297A1005	None	NA	V5097A1004	32000109-002
VABHHXB1106	32000109-002	V4297A1005	None	NA	V4297A1005	32000109-002
VACHAXC1002	32000109-003	V4297A1005	None	NA	V5097A1004	32000109-003
VACHHXC1104	32000109-003	V4297A1005	None	NA	V4297A1005	32000109-003
VADHAXD1000	32000109-004	V4297A1005	None	NA	V5097A1004	32000109-004
VADJCXD1102	32000109-004	V4297A1013	None	NA	V5097C1000	32000109-004
VADJJXD1104	32000109-004	V4297A1013	None	NA	V4297A1013	32000109-004
VAEJCXE1100	32000109-005	V4297A1013	None	NA	V5097C1000	32000109-005
VAEJJXE1102	32000109-005	V4297A1013	None	NA	V4297A1013	32000109-005
VBCHAXC1000	32000109-003	V4297A1005	V4297S1003	Forward	V5097A1004	32000109-003

Product Number	Pipe size (in.)	Pipe Thread	Integrated Valve Train Body Size	Description	Includes
VAAHXA1108	3/4 in.	NPT	Small	Assembled Valve Train	V4297A1005, 32000109-001
VABHXB1004	1 in.	NPT	Small	Assembled Valve Train	V5097A1004, V4297A1005, 32000109-002
VABHHXB1106	1 in.	NPT	Small	Assembled Valve Train	V4297A1005, 32000109-002
VACHAXC1002	1 1/4 in.	NPT	Small	Assembled Valve Train	V5097A1004, V4297A1005, 32000109-003
VACHHXC1104	1 1/4 in.	NPT	Small	Assembled Valve Train	V4297A1005, 32000109-003
VADHAXD1000	1 1/2 in.	NPT	Small	Assembled Valve Train	V5097A1004, V4297A1005, 32000109-004
VADJCXD1102	1 1/2 in.	NPT	Small	Assembled Valve Train	V5097C1000, V4297A1013, 32000109-004
VADJJXD1104	1 1/2 in.	NPT	Small	Assembled Valve Train	V4297A1013, 32000109-004
VAEJCXE1100	2 in.	NPT	Small	Assembled Valve Train	V5097C1000, V4297A1013, 32000109-005
VAEJJXE1102	2 in.	NPT	Small	Assembled Valve Train	V4297A1013, 32000109-005
VBCHAXC1000	1 1/4 in.	NPT	Small	Assembled Valve Train	V5097A1004, V4297A1005, 32000109-003

V5097 Assembled Valve Train

Integrated Valve Train Arrangement:

	First Adapter	First Valve	Vent Valve	Vent Pipe Forward or Backward	Second Valve	Second Adapter
VABAAXB1009	32000109-002	V5097A1004	None	NA	V5097A1004	32000109-002
VACAAXC1007	32000109-003	V5097A1004	None	NA	V5097A1004	32000109-003
VADAAXD1005	32000109-004	V5097A1004	None	NA	V5097A1004	32000109-004
VADBAXD1003	32000109-004	V5097B1002	None	NA	V5097A1004	32000109-004
VAEAAXE1003	32000109-005	V5097A1004	None	NA	V5097A1004	32000109-005
VAEACXE1001	32000109-005	V5097A1004	None	NA	V5097C1000	32000109-005
VBAAXB1007	32000109-002	V5097A1004	V4297S1003	Forward	V5097A1004	32000109-002
VBBACXB1005	32000109-002	V5097A1004	V4297S1003	Forward	V5097C1000	32000109-002
VBDAAXD1003	32000109-004	V5097A1004	V4297S1003	Forward	V5097A1004	32000109-004
VBDACXD1001	32000109-004	V5097A1004	V4297S1003	Forward	V5097C1000	32000109-004
VBEAAXE1001	32000109-005	V5097A1004	V4297S1003	Forward	V5097A1004	32000109-005
VBEACXE1009	32000109-005	V5097A1004	V4297S1003	Forward	V5097C1000	32000109-005
VCBAAXB1005	32000109-002	V5097A1004	V4297S1003	Backward	V5097A1004	32000109-002
VCBACXB1003	32000109-002	V5097A1004	V4297S1003	Backward	V5097C1000	32000109-002
VCCAAXC1003	32000109-003	V5097A1004	V4297S1003	Backward	V5097A1004	32000109-003
VCDAAXD1001	32000109-004	V5097A1004	V4297S1003	Backward	V5097A1004	32000109-004
VCDACXD1009	32000109-004	V5097A1004	V4297S1003	Backward	V5097C1000	32000109-004
VCDABXD1009	32000109-004	V5097B1002	V4297S1003	Backward	V5097A1004	32000109-004
VCDCCXD1005	32000109-004	V5097C1000	V4297S1003	Backward	V5097C1000	32000109-004
VCEAAXE1009	32000109-005	V5097A1004	V4297S1003	Backward	V5097A1004	32000109-005
VCEACXE1007	32000109-005	V5097A1004	V4297S1003	Backward	V5097C1000	32000109-005
VDFAXF1005	32001605-001	V5097A1012	None	NA	V5097A1012	32001605-001
VDFACXF1003	32001605-001	V5097A1012	None	NA	V5097C1000	32001605-001
VDGAAXG1003	32001605-002	V5097A1012	None	NA	V5097A1012	32001605-002

Integrated Valve Train

	First Adapter	First Valve	Vent Valve	Vent Pipe Forward or Backward	Second Valve	Second Adapter
VDGACXG1001	32001605-002	V5097A1012	None	NA	V5097C1000	32001605-002
VDHAAXH1001	32001605-003	V5097A1012	None	NA	V5097A1012	32001605-003
VDHACXH1009	32001605-003	V5097A1012	None	NA	V5097C1018	32001605-003
VEFAAXF1002	32001605-001	V5097A1012	V4297S1011	Forward	V5097A1012	32001605-001
VEFACXF1000	32001605-001	V5097A1012	V4297S1011	Forward	V5097C1018	32001605-001
VEGACXG1008	32001605-002	V5097A1012	V4297S1011	Forward	V5097C1018	32001605-002
VEGCCXG1004	32001605-002	V5097C1018	V4297S1011	Forward	V5097C1018	32001605-002
VEHACXH1006	32001605-003	V5097A1012	V4297S1011	Forward	V5097C1018	32001605-003
VFFAAXF1000	32001605-001	V5097A1012	V4297S1011	Backward	V5097A1012	32001605-001
VFFCCXF1004	32001605-001	V5097C1018	V4297S1011	Backward	V5097C1018	32001605-001
VFGAAXG1008	32001605-002	V5097A1012	V4297S1011	Backward	V5097A1012	32001605-002
VFHAAXH1006	32001605-003	V5097A1012	V4297S1011	Backward	V5097A1012	32001605-003

Product Number	Pipe size (in.)	Pipe Thread	Integrated Valve Train Body Size	Includes
VABAAXB1009	1 in.	NPT	Small	V5097A1004, 32000109-002
VACAAXC1007	1 1/4 in.	NPT	Small	V5097A1004, 32000109-003
VADAAXD1005	1 1/2 in.	NPT	Small	V5097A1004, 32000109-004
VADBAXD1003	1 1/2 in.	NPT	Small	V5097B1002, V5097A1004, 32000109-004
VAEAAXE1003	2 in.	NPT	Small	V5097A1004, 32000109-005
VAEACXE1001	2 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-005
VBBAAXB1007	1 in.	NPT	Small	V5097A1004, 32000109-002
VBBACXB1005	1 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-002
VBDAAXD1003	1 1/2 in.	NPT	Small	V5097A1004, 32000109-004
VBDACXD1001	1 1/2 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-004
VBEEAAE1001	2 in.	NPT	Small	V5097A1004, 32000109-005
VBEACXE1009	2 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-005
VCBAAXB1005	1 in.	NPT	Small	V5097A1004, 32000109-002
VCBACXB1003	1 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-002
VCCAAXC1003	1 1/4 in.	NPT	Small	V5097A1004, 32000109-003
VCDAAAXD1001	1 1/2 in.	NPT	Small	V5097A1004, 32000109-004
VCDACXD1009	1 1/2 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-004
VCDBAXD1009	1 1/2 in.	NPT	Small	V5097B1002, V5097A1004, 32000109-004
VCDCCXD1005	1 1/2 in.	NPT	Small	V5097C1000, 32000109-004
VCEAAXE1009	2 in.	NPT	Small	V5097A1004, 32000109-005
VCEACXE1007	2 in.	NPT	Small	V5097C1000, V5097A1004, 32000109-005
VDFAAXF1005	2 in.	NPT	Large	V5097A1012, 32001605-001
VDFACXF1003	2 in.	NPT	Large	V5097C1000, V5097A1012, 32001605-001
VDGAAXG1003	2-1/2 in.	NPT	Large	V5097A1012, 32001605-002
VDGACXG1001	2-1/2 in.	NPT	Large	V5097C1000, V5097A1012, 32001605-002
VDHAAXH1001	3 in.	NPT	Large	V5097A1012, 32001605-003
VDHACXH1009	3 in.	NPT	Large	V5097C1018, V5097A1012, 32001605-003
VEFAAXF1002	2 in.	NPT	Large	V5097A1012, 32001605-001
VEFACXF1000	2 in.	NPT	Large	V5097C1018, V5097A1012, 32001605-001
VEGACXG1008	2-1/2 in.	NPT	Large	V5097C1018, V5097A1012, 32001605-002
VEGCCXG1004	2-1/2 in.	NPT	Large	V5097C1018, 32001605-002
VEHACXH1006	3 in.	NPT	Large	V5097C1018, V5097A1012, 32001605-003

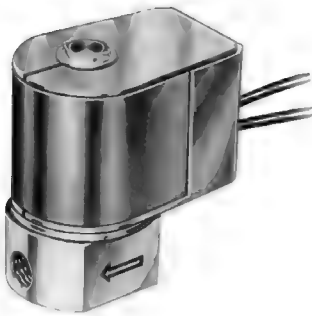
Integrated Valve Train

Product Number	Pipe size (in.)	Pipe Thread	Integrated Valve Train Body Size	Includes
VFFAAXF1000	2 in.	NPT	Large	V5097A10123, 2001605-001
VFFCCXF1004	2 in.	NPT	Large	V5097C1018, 32001605-001
VFGAAXG1008	2-1/2 in.	NPT	Large	V5097A1012, 32001605-002
VFHAAXH1006	3 in.	NPT	Large	V5097A1012, 32001605-003

Integrated Valve Train Pipe Adapter

Product Number	Pipe size (in.)	Pipe Thread	Integrated Valve Train Body Size	Description
32000109-001	3/4 in.	NPT	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-002	1 in.	NPT	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-003	1 1/4 in.	NPT	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-004	1 1/2 in.	NPT	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-005	2 in.	NPT	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-006	3/4 in.	BSP	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-007	1 in.	BSP	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-008	1 1/4 in.	BSP	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-009	1 1/2 in.	BSP	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32000109-010	2 in.	BSP	Small body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-001	2 in.	NPT	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-002	2 1/2 in.	NPT	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-003	3 in.	NPT	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-004	2 in.	BSP	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-005	2 1/2 in.	BSP	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.
32001605-006	3 in.	BSP	Large body	Pipe Adapter Integrated Valve Train. Required for Valve Train Assembly.

V4046C; V8046C Pilot Gas Valves



Provide on-off control of natural, LP and manufactured gases to pilot burners in industrial and commercial applications.

- Magnetically operated, normally closed.
- Provide instantaneous action when energized.
- On power failure, valve closes in one second maximum.
- Use in any position, directly in pipe line or on support bracket.
- Replace the solenoid coil without removing the valve body from the piping connections.
- Straight-through valve pattern.
- Available in line voltage or low voltage models.

Type of Gas: Air, natural, manufactured, and LP

Dimensions, Approximate: 2 3/4 in. high, 2 5/8 in. wide, 1 5/8 in. deep
(70 mm high, 67 mm wide, 41 mm deep)

Valve pattern: Straight-through

Frequency: 50 Hz, 60 Hz

Mounting Type: Directly in pipe or on support bracket

Temperature Ratings: -40 F to 125 F (-40 C to 52 C)

Pressure Ratings: 10 psi (13.8 kPa)

Valve Closing Time (sec): 1 sec max

Valve Opening Time: 1 sec max

Approvals:

Canadian Standards Association: Certificate No. 158158-
2500006058, Guide No. C3371-03, 83

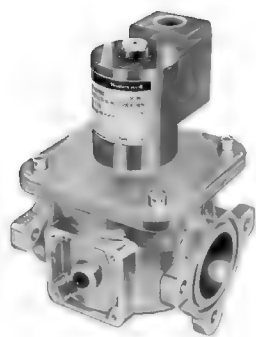
Factory Mutual: Straight-through

Industrial Risk Insurers: Underwriters Laboratories, Inc: Listed:
File No. MH1639, V3, S3 - Guide No. YIOZ

Product Number	Pipe size		Capacity		Power (Vac)	Electrical Terminations
	(inch)	(mm)	cfh	m ³ /hr		
V4046C1005	1/8 in.	3 mm	20 cfh	0.57 m ³ /hr	110 Vac, 120 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V4046C1021	1/4 in.	6 mm	20 cfh	0.57 m ³ /hr	110 Vac, 120 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V4046C1047	1/4 in.	6 mm	55 cfh	1.56 m ³ /hr	110 Vac, 120 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V4046C1054	3/8 in.	9 mm	67 cfh	1.90 m ³ /hr	110 Vac, 120 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V4046C1088	3/8 in.	9 mm	67 cfh	1.90 m ³ /hr	208 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V4046C1120	3/8 in.	9 mm	67 cfh	1.90 m ³ /hr	120 Vac	Two 10 ft. leadwires and 1/2 in. conduit bushing
V8046C1006	1/8 in.	3 mm	20 cfh	0.57 m ³ /hr	24 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V8046C1014	1/4 in.	6 mm	20 cfh	0.57 m ³ /hr	24 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V8046C1022	1/4 in.	6 mm	55 cfh	1.56 m ³ /hr	24 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing
V8046C1030	3/8 in.	9 mm	67 cfh	1.90 m ³ /hr	24 Vac	Two 36-in. leadwires and 1/2 in. conduit bushing

Solenoid Gas Valves

V4297A Solenoid Safety Shut-off Valve



Type of Gas: Air, natural, manufactured, mixed, and LP
Dimensions, Approximate: 9 in. high, 5 3/4 in. wide, 5 5/8 in. deep
 (229 mm high, 147 mm wide, 143 mm deep)
Valve pattern: Straight-through, non-offset
Electrical Terminations: screw terminal connections
Frequency: 50 Hz, 60 Hz
Power (Vac): 110 Vac, 120 Vac
Inlet and Outlet Pressure Tapping: 1/4 in. NPT
Mounting Type: Directly bolted to Integrated Valve Train Components
Temperature Ratings: -40 F to 130 F (-40 C to 54 C)
Pressure Ratings: 5 psi (34.5 kPa)

V4295A are normally closed and V4295S are normally open (vent) solenoid gas valve. Suitable for use on furnaces, ovens, atmospheric burners, commercial water heaters, roof-top make-up air units, power burners, and commercial/ industrial boilers.

- V4295A,S are used with 120 Vac controllers.
- Positive close off of gas flow when de-energized.
- High valve spring force allows up to 0.7 psi back pressure at valve seat.
- No inlet pressure influence at valve seat. Inlet pressure changes do not affect ability to close valve.
- Low operating noise.
- Low rush-in current.
- Upstream and downstream taps allows tapping and testing pressure points.
- For use with the Integrated Valve Train.

Valve Closing Time (sec): less than 1 sec

Valve Opening Time: less than 1 sec

Approvals:

Canadian Standards Association: Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83

Factory Mutual: Straight-through, non-offset

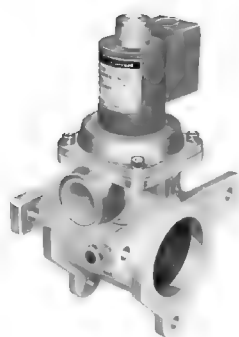
Underwriters Laboratories, Inc: Listed: File No. MH18476, V1, S1 - Guide No. YIOZ

Accessories:

See table on page 768

Product Number	Pipe size		Capacity		Flanges	Current (max amps at rated Vac/Hz)	Integrated Valve Train Body Size	Replacement Parts
	(inch)	(mm)	cfh	m ³ /hr				
V4297A1005	3/4 in. 1 in. 1 1/4 in.	19 mm to 32 mm	650 cfh 700 cfh 780 cfh	18.4 m ³ /hr 19.8 m ³ /hr 22.1 m ³ /hr	Required, Order Separately	0.2 amps	Small body, small flow	BBA51315 Coil Assembly
V4297A1013	3/4 in. 1 in. 1 1/4 in. 1 1/2 in. 2 in.	19 mm to 51 mm	1190 cfh 1460 cfh 2260 cfh 2735 cfh 3060 cfh	33.7 m ³ /hr 41.3 m ³ /hr 64.0 m ³ /hr 77.4 m ³ /hr 86.6 m ³ /hr	Required, Order Separately	0.5 amps	Small body, large flow	BBA51318 Coil Assembly

V4297S Normally Open Vent Valve



Type of Gas: Air, natural, manufactured, mixed, and LP
Dimensions, Approximate: 9 1/2 in. high, 3 1/8 in. wide, 5 in. deep
 (241 mm high, 79 mm wide, 127 mm deep)

Valve pattern: Straight-through, non-offset

Electrical Terminations: screw terminal connections

Frequency: 50 Hz, 60 Hz

Power (Vac): 110 Vac, 120 Vac

Inlet and Outlet Pressure Tapping: 1/4 in. NPT

Mounting Type: Directly bolted to Integrated Valve Train Components

Temperature Ratings: -40 F to 145 F (-40 C to 63 C)

Pressure Ratings: 5 psi (34.5 kPa)

Valve Closing Time (sec): less than 1 sec

Valve Opening Time: less than 1 sec

Approvals:

Canadian Standards Association: Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83

Factory Mutual: Straight-through, non-offset

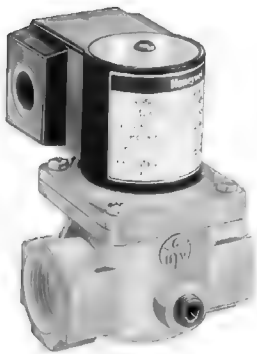
Underwriters Laboratories, Inc: Listed: File No. MH18476, V1, S1 - Guide No. YIOZ

Accessories:

See table on page 768

Product Number	Pipe size		Capacity		Flanges	Current (max amps at rated Vac/Hz)	Integrated Valve Train Body Size	Replacement Parts
	(inch)	(mm)	cfh	m ³ /hr				
V4297S1003	1 in.	25 mm	714 cfh	20.2 m ³ /hr	Required	0.2 amps	Small body	BBA51316 Coil Assembly
V4297S1011	1 1/4 in.	32 mm	1115 cfh	31.6 m ³ /hr	Required	0.34 amps	Large body	BBA51317 Coil Assembly

V4295; V8295 Solenoid Gas Valves



Type of Gas: Air, natural, manufactured, mixed, and LP
Dimensions, Approximate: 4 7/16 in. high, 2 7/8 in. wide, 2 3/16 deep
 (113 mm high, 73 mm wide, 56 mm deep)
Valve pattern: Straight-through, non-offset
Electrical Terminations: screw terminal connections
Frequency: 50 Hz, 60 Hz
Inlet and Outlet Pressure Tapping: 1/4 in. NPT
Mounting Type: Vertical to 90 degrees from vertical
Temperature Ratings: -40 F to 140 F (-40 C to 60 C)
Pressure Ratings: 2 psi (13.8 kPa)
Valve Closing Time (sec): less than 1 sec

V4295A/V8295A are normally closed and V4295S/V8295S are normally open (vent) solenoid gas valve. Suitable for use on furnaces, ovens, atmospheric burners, commercial water heaters, roof-top make-up air units, power burners, and commercial/ industrial boilers.

- V4295A,S are used with 120 Vac controllers.
- V8295A,S are used with 24 Vac controllers.
- Positive close off of gas flow when de-energized.
- High valve spring force allows up to 0.7 psi back pressure at valve seat.
- No inlet pressure influence at valve seat. Inlet pressure changes do not affect ability to close valve.
- Low operating noise.
- Low rush-in current.
- Upstream and downstream taps allows tapping and testing pressure points.

Valve Opening Time: less than 1 sec

Approvals:

Canadian Standards Association: Certificate No. 158158-1154280, Guide No. C3371-03, 04, 83

Factory Mutual: Straight-through, non-offset

Underwriters Laboratories, Inc: Listed: File No. MH18476, V1, S1 - Guide No. YIOZ

Accessories:

See table on page 768

Product Number	Pipe size		Capacity		Current (max amps at rated Vac/Hz)	Replacement Parts	Power (Vac)
	(inch)	(mm)	cfh	m ³ /hr			
V4295A1007	3/8 in.	9 mm	230 cfh	6.5 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1015	1/2 in.	13 mm	250 cfh	7.1 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1023	3/4 in.	19 mm	645 cfh	18.3 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1031	1 in.	25 mm	790 cfh	22.4 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1049	1 1/4 in.	32 mm	1450 cfh	41.0 m ³ /hr	0.340 amps	BBA51303 Coil Assembly	120 Vac
V4295A1056	1 1/2 in.	38 mm	2190 cfh	62.0 m ³ /hr	0.300 amps	BBA51301 Coil Assembly	120 Vac
V4295A1064	2 in.	51 mm	3465 cfh	98.1 m ³ /hr	0.525 amps	BBA51304 Coil Assembly	120 Vac
V4295A1072	2-1/2 in.	64 mm	5070 cfh	143.5 m ³ /hr	0.575 amps	BBA51305 Coil Assembly	120 Vac
V4295A1080	3 in.	76 mm	6100 cfh	172.7 m ³ /hr	0.675 amps	BBA51306 Coil Assembly	120 Vac
V4295A1098	3/8 in.	9 mm	210 cfh	5.9 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1106	1/2 in.	13 mm	290 cfh	8.2 m ³ /hr	0.160 amps	BBA51302 Coil Assembly	120 Vac
V4295A1114	3/4 in.	19 mm	610 cfh	17.3 m ³ /hr	0.2 amps	BBA51314 Coil Assembly	120 Vac
V4295A1122	1 in.	25 mm	825 cfh	23.4 m ³ /hr	0.2 amps	BBA51309 Coil Assembly	120 Vac
V4295A1130	1 1/4 in.	32 mm	1950 cfh	55.2 m ³ /hr	0.550 amps	BBA51310 Coil Assembly	120 Vac
V4295A1148	1 1/2 in.	38 mm	2270 cfh	64.3 m ³ /hr	0.550 amps	BBA51310 Coil Assembly	120 Vac
V4295A1155	2 in.	51 mm	3740 cfh	105.9 m ³ /hr	0.540 amps	BBA51311 Coil Assembly	120 Vac
V4295S1005	3/4 in.	19 mm	350 cfh	9.9 m ³ /hr	0.160 amps	BBA51307 Coil Assembly	120 Vac
V4295S1013	1 in.	25 mm	420 cfh	11.9 m ³ /hr	0.160 amps	BBA51307 Coil Assembly	120 Vac
V4295S1021	1 1/4 in.	32 mm	1100 cfh	31.1 m ³ /hr	0.340 amps	BBA51308 Coil Assembly	120 Vac
V8295A1008	3/8 in.	9 mm	230 cfh	6.5 m ³ /hr	0.8 amps	BBA52402 Coil Assembly	24 Vac
V8295A1016	1/2 in.	13 mm	250 cfh	7.1 m ³ /hr	0.8 amps	BBA52402 Coil Assembly	24 Vac
V8295A1024	3/4 in.	19 mm	645 cfh	18.3 m ³ /hr	0.8 amps	BBA52402 Coil Assembly	24 Vac
V8295A1032	1 in.	25 mm	790 cfh	22.4 m ³ /hr	0.8 amps	BBA52402 Coil Assembly	24 Vac

Solenoid Gas Valves

Product Number	Pipe size		Capacity		Current (max amps at rated Vac/Hz)	Replacement Parts	Power (Vac)
	(inch)	(mm)	cfh	m ³ /hr			
V8295A1040	1 1/4 in.	32 mm	1450 cfh	41.0 m ³ /hr	0.8 amps	BBA52403 Coil Assembly	24 Vac
V8295A1057	1 1/2 in.	38 mm	2190 cfh	62.0 m ³ /hr	0.8 amps	BBA52401 Coil Assembly	24 Vac
V8295A1065	2 in.	51 mm	3465 cfh	98.1 m ³ /hr	0.8 amps	BBA52404 Coil Assembly	24 Vac
V8295S1006	3/4 in.	19 mm	350 cfh	143.5 m ³ /hr	0.8 amps	BBA52407 Coil Assembly	24 Vac
V8295S1014	1 in.	25 mm	420 cfh	172.7 m ³ /hr	0.8 amps	BBA52407 Coil Assembly	24 Vac
V8295S1022	1 1/4 in.	32 mm	1100 cfh	—	0.8 amps	BBA524078 Coil Assembly	24 Vac

Solenoid Gas Valve Replacement Parts or Accessories

OS Number	Description	Used With
116668A	Coil Assembly-24V/60	V8046
116670A	Replacement Coil Assembly for 240V, 60 Hz V4046	V4046
116671A	Replacement Coil Assembly for 120V, 60 Hz V4046	V4046
116782A	Replacement Coil Assembly for 208V, 60 Hz V4046C	V4046C
32004925-001	Closed Position Indicator (CPI) switch. Used with V4297A	V4297
BBA51301	Replacement Coil for V4295 normally closed valve	V4295
BBA51302	Replacement Coil for V4295 normally closed valve	V4295
BBA51303	Replacement Coil for V4295 normally closed valve	V4295
BBA51304	Replacement Coil for V4295 normally closed valve	V4295
BBA51305	Replacement Coil for V4295 normally closed valve	V4295
BBA51306	Replacement Coil for V4295 normally closed valve	V4295
BBA51307	Replacement Coil for V4295 normally open valve	V4295
BBA51308	Replacement Coil for V4295 normally open valve	V4295
BBA51309	Replacement Coil for V4295 normally closed valve	V4295
BBA51310	Replacement Coil for V4295 normally closed valve	V4295
BBA51311	Replacement Coil for V4295 normally closed valve	V4295
BBA51314	Replacement Coil for V4295 normally closed valve	V4295
BBA51315	Replacement Coil for V4297A1005	V4297
BBA51316	Replacement Coil for V4297A small body	V4297
BBA51317	Replacement Coil for V4297S Large body	V4297
BBA51318	Replacement Coil for V4297A1013	V4297
BBA52401	Replacement Coil for V8295 normally closed valve	V8295
BBA52402	Replacement Coil for V8295 normally closed valve	V8295
BBA52403	Replacement Coil for V8295 normally closed valve	V8295
BBA52404	Replacement Coil for V8295 normally closed valve	V8295
BBA52407	Replacement Coil for V8295 normally open valve	V8295
BBA52408	Replacement Coil for V8295 normally open valve	V8295
KTCPI001	Visual indication for V4297A	V4297

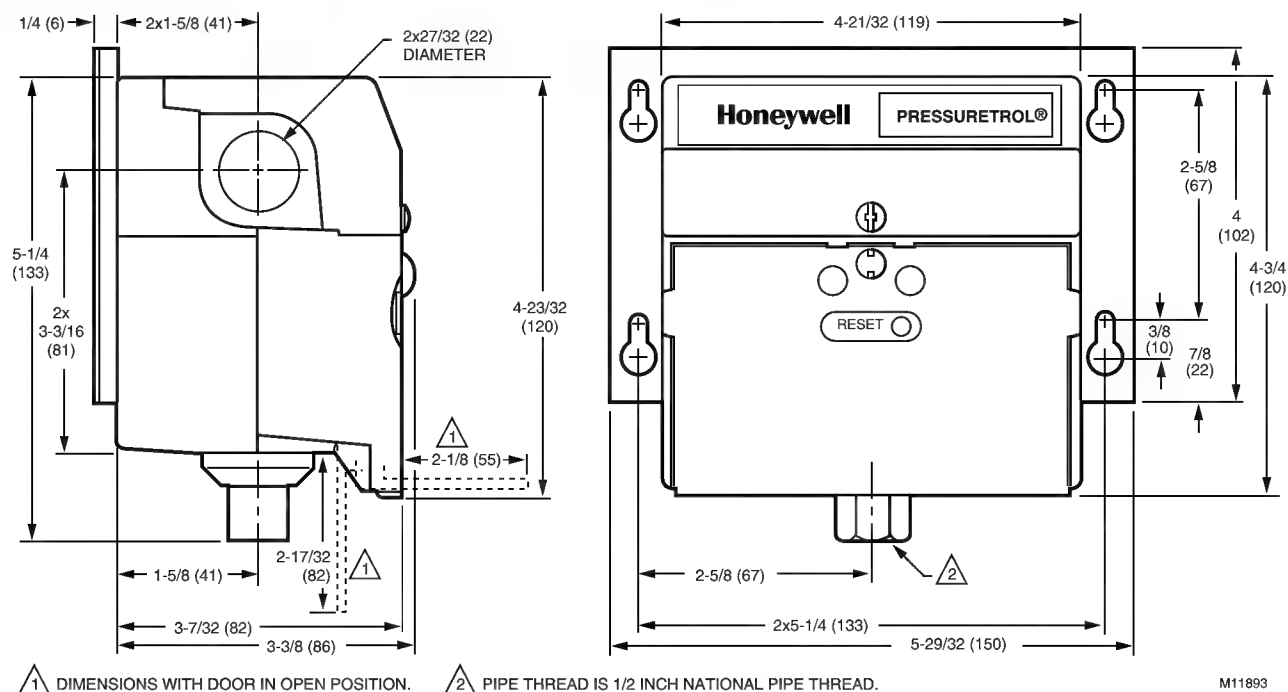
P7810 Pressure Control



Line voltage pressure controller that provides automatic operating control, automatic limit protection, manual reset limit protection, or modulating firing rate control for pressure systems up to 300 psi.

- May be used with steam, air, non-combustible gases or fluids that will not corrode the pressure sensing element.
- Models available in 15, 150, 300 psi maximum set points.
- LED indicators show limit function lockout.
- Reset function easily accessible under cover.
- Clear cover allows set point and differentials to be read (but not adjusted) without opening the cover.

Dimension Diagrams



M11893

Dimensions, Approximate: 5 1/4 in. high, 4 21/32 in. wide, 3 3/8 in. deep (133 mm high, 119 mm wide, 86 mm deep)

Case Material: Plastic

Electrical Connections: Screw terminals

Frequency (Hz): 50/60 Hz

Humidity Ratings (% RH): 5 to 95% RH, non-condensing

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Temperature Ratings: -40 F to 185 F (-40 C to 85 C)

Approvals:

Canadian Standards Association: Certified: File No. LR95329-6

Factory Mutual: Approved: Report No. J.I.2D3A6AF

Underwriters Laboratories, Inc: Listed: File No. MP268, Guide No. MCCZ

Switch Contact Ratings:

120 Vac
9.8 AFL, 58.8 ALR, 10.0 A resistive

Accessories:

209731A Siphon Loop for P7810C, D

4074EWD P7810 Mounting Bracket and Mounting Screws (6)

Product Number	Modulating Output	Application	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure (psi)		Switching Action
			(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)	
P7810A1004	—	On - Off Control	0 psi to 15 psi	0 kPa to 103 kPa	2 psi to 10 psi	14 kPa to 41 kPa	22.5 psi	155 kPa	Break on pressure rise
P7810A1012	—	On - Off Control	0 psi to 150 psi	0 kPa to 1034 kPa	5 psi to 20 psi	35 kPa to 135 kPa	22.5 psi	155 kPa	Break on pressure rise
P7810A1020	—	On - Off Control	0 psi to 300 psi	0 kPa to 2068 kPa	15 psi to 50 psi	103 kPa to 340 kPa	450 psi	3103 kPa	Break on pressure rise
P7810B1002	4 mA to 20 mA	On-off plus Modulate	0 psi to 15 psi	0 kPa to 103 kPa	2 psi to 10 psi	14 kPa to 69 kPa	22.5 psi	155 kPa	Break on pressure rise

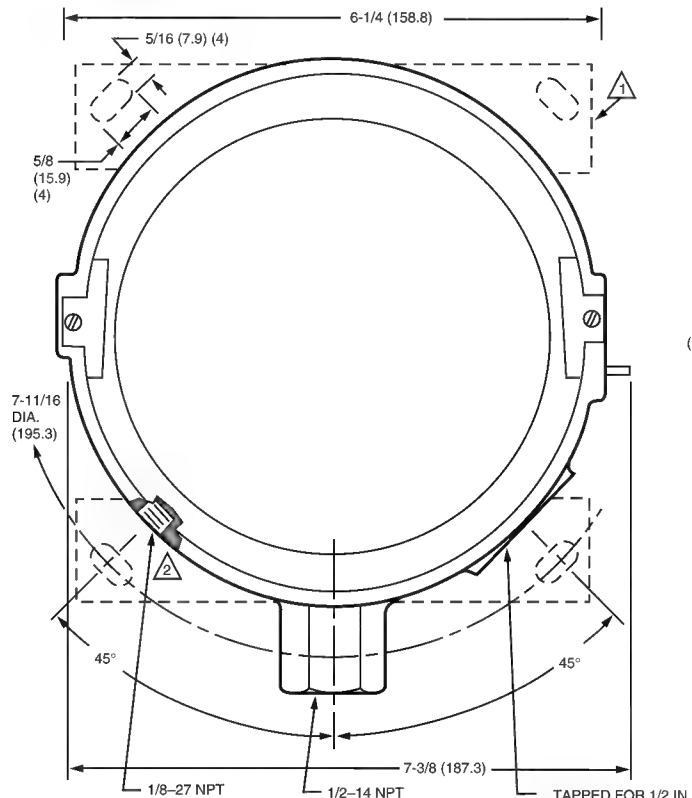
Pressure Controls

Product Number	Modulating Output	Application	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure (psi)		Switching Action
			(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)	
P7810B1010	4 mA to 20 mA	On-off plus Modulate	0 psi to 150 psi	0 kPa to 1034 kPa	5 psi to 20 psi	35 kPa to 135 kPa	22.5 psi	155 kPa	Break on pressure rise
P7810B1028	4 mA to 20 mA	On-off plus Modulate	0 psi to 300 psi	0 kPa to 2068 kPa	5 psi to 20 psi	35 kPa to 135 kPa	450 psi	3103 kPa	Break on pressure rise
P7810C1000	4 mA to 20 mA	On-off, Modulate and Limit Control	0 psi to 15 psi	0 kPa to 103 kPa	2 psi to 10 psi	14 kPa to 69 kPa	22.5 psi	155 kPa	Break on pressure rise
P7810C1018	4 mA to 20 mA	On-off, Modulate and Limit Control	0 psi to 150 psi	0 kPa to 1034 kPa	5 psi to 20 psi	35 kPa to 135 kPa	225 psi	1551 kPa	Break on pressure rise
P7810C1026	4 mA to 20 mA	On-off, Modulate and Limit Control	0 psi to 300 psi	0 kPa to 2068 kPa	15 psi to 50 psi	103 kPa to 340 kPa	450 psi	3103 kPa	Break on pressure rise
P7810D1008	—	On-off and Limit Control	0 psi to 15 psi	0 kPa to 103 kPa	2 psi to 10 psi	14 kPa to 69 kPa	22.5 psi	155 kPa	Break on pressure rise
P7810D1016	—	On-off and Limit Control	0 psi to 150 psi	0 kPa to 1034 kPa	5 psi to 20 psi	35 kPa to 135 kPa	225 psi	1551 kPa	Break on pressure rise
P7810D1024	—	On-off and Limit Control	0 psi to 300 psi	0 kPa to 2068 kPa	15 psi to 50 psi	103 kPa to 340 kPa	450 psi	3103 kPa	Break on pressure rise

C437; C637 Gas/Air Pressure Switches

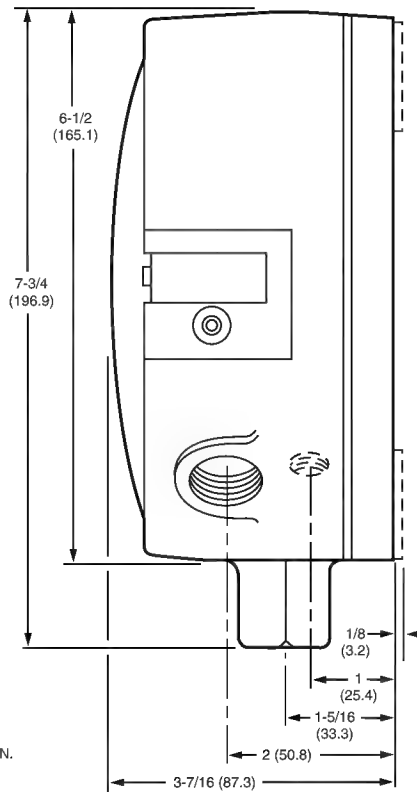


Dimension Diagram



1 137755 MOUNTING BRACKET (2), IN 4074BWK BAG ASSEMBLY – STANDARD ON C437G AND H; OPTIONAL ON OTHER MODELS.

2 VENT TAPPING. REMOVE DUST-SEAL LABEL BEFORE MOUNTING.



M7192

Application: Safety shutoff, pressure control, and differential-pressure control.

Case Material: Die-cast aluminum

Differential Type: Subtractive

Piping Connections, Main or High Pressure: 1/2 in. NPT internal thread

Piping Connections, Vent or Low pressure: 1/8 in. NPT internal thread

Temperature (max. ambient): 125 F (52 C)

Switch Contact Ratings:

	120 Vac	120 Vdc	240 Vac	240 Vdc
C437D,E,H	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.4 AFL, 24.0 ALR, 5.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.2 AFL, 12.0 ALR, 2.0 A resistive
C437F,J,K	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.0 AFL, 20.0 ALR, 8.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.0 AFL, 10.0 ALR, 4.0 A resistive
C637B	62.5 VA pilot duty	—	62.5 VA pilot duty	—

Temperature Ratings: 32 F to 125 F (0 C to 52 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 380-W-1.16

Industrial Risk Insurers: Acceptable

Factory Mutual: Approved: Report No. 22018, 24127, J.I.IF4A3.AF

Underwriters Laboratories, Inc: Listed: File No. MP2168, Guide No. MFHX

Pressure Switches

Product Number	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure		Switch Operation	Switching Action
	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)		
C437D1005	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 3/4 in. wc	0.44 kPa	5.0 psi	34.5 kPa	Manual Reset	SPST, break on rise
C437D1013	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/2 psi	3.45 kPa	15.0 psi	103.4 kPa	Manual Reset	SPST, break on rise
C437D1021	1 psi to 10 psi	5.0 kPa to 70.0 kPa	1 psi	6.89 kPa	30.0 psi	206.8 kPa	Manual Reset	SPST, break on rise
C437E1004	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Manual Reset	SPST, break on fall
C437E1012	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/4 psi	1.72 kPa	15.0 psi	103.4 kPa	Manual Reset	SPST, break on fall
C437E1020	1 psi to 10 psi	5.0 kPa to 70.0 kPa	1/2 psi	3.45 kPa	30.0 psi	206.8 kPa	Manual Reset	SPST, break on fall
C437E1038	1/2 in. wc to 5 1/2 in. wc	0.1 kPa to 1.4 kPa	0.25 in. wc	0.06 kPa	3.0 psi	20.7 kPa	Manual Reset	SPST, break on fall
C437F1003	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Auto recycle	SPST (two), break one and make one
C437F1011	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/4 psi	1.72 kPa	15.0 psi	103.4 kPa	Auto recycle	SPST (two), break one and make one
C437F1029	1 psi to 10 psi	5.0 kPa to 70.0 kPa	1/2 psi	3.45 kPa	30.0 psi	206.8 kPa	Auto recycle	SPST (two), break one and make one
C437F1037	1/2 in. wc to 5 1/2 in. wc	0.1 kPa to 1.4 kPa	0.25 in. wc	0.06 kPa	3.0 psi	20.7 kPa	Auto recycle	SPST (two), break one and make one
C437F1045	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Auto recycle	SPST (two), break one and make one
C437F1052	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/4 psi	1.72 kPa	15.0 psi	103.4 kPa	Auto recycle	SPST (two), break one and make one
C437F1060	1 psi to 10 psi	5.0 kPa to 70.0 kPa	1/2 psi	3.45 kPa	30.0 psi	206.8 kPa	Auto recycle	SPST (two), break one and make one
C437F1078	1/2 in. wc to 5 1/2 in. wc	0.1 kPa to 1.4 kPa	0.25 in. wc	0.06 kPa	3.0 psi	20.7 kPa	Auto recycle	SPST (two), break one and make one
C437G1002	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Auto recycle	Break on pressure rise
C437H1027	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/4 psi	1.72 kPa	15.0 psi	103.4 kPa	Auto recycle	SPST, breaks on fall, no manual reset,
C437H1076	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Auto recycle	SPST, break on fall, rain proof enclosure
C437H1084	1/2 psi to 5 psi	3.0 kPa to 35 kPa	1/4 psi	1.72 kPa	15.0 psi	103.4 kPa	Auto recycle	SPST, break on fall, rain proof enclosure
C637B1002	1 in. wc to 26 in. wc	0.5 kPa to 7.0 kPa	1 1/4 in. wc	0.31 kPa	5.0 psi	34.5 kPa	Auto recycle	SPST, breaks R-W and makes R-B on fall, no manual reset
C637B1028	1 psi to 10 psi	5.0 kPa to 70.0 kPa	1/2 psi	3.45 kPa	30.0 psi	206.8 kPa	Auto recycle	SPDT break R-W, make R-B on pressure fall
C637B1036	1/2 in. wc to 5 1/2 in. wc	0.1 kPa to 1.4 kPa	1/2 psi	3.45 kPa	3.0 psi	20.7 kPa	Auto recycle	SPST, breaks R-W and makes R-B on fall, no manual reset

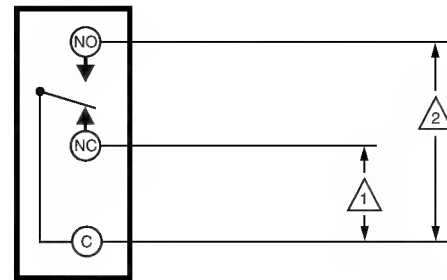
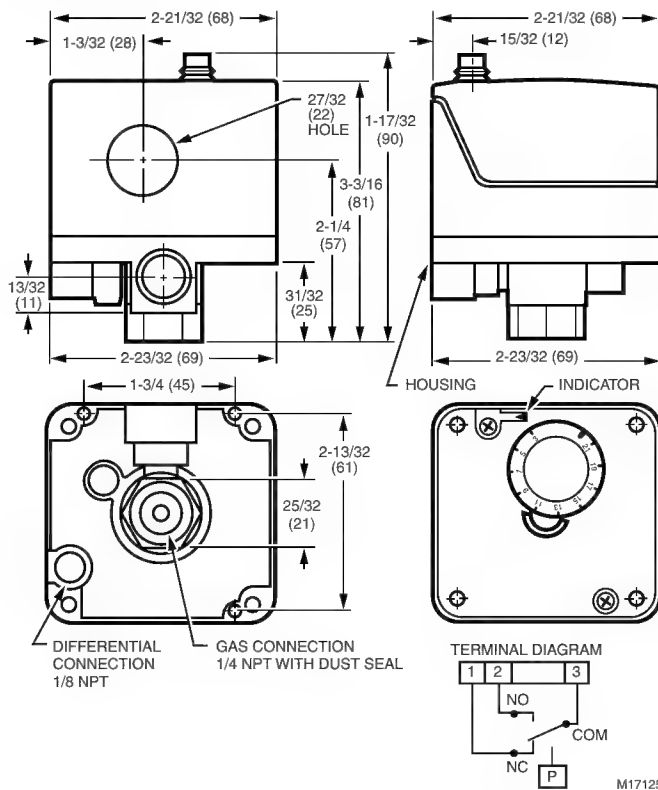
C6097 Pressure Switch



The C6097 Pressure Switches are safety devices used in positive-pressure or differential-pressure systems to sense gas or air pressure systems.

- For use with natural gas, liquid propane (LP) gas, or air.
- Diaphragm-actuated safety-limit switch.
- Switch can be wired to turn on alarm.
- C6097A models break control circuit at setpoint on pressure fall.
- C6097B models break control circuit at setpoint on pressure rise.
- Lockout with manual reset and recycle options.
- Lockout models have external manual reset button.
- Removable transparent cover protects scaleplate and adjusting knob.
- Pipe tappings allow selection of positive pressure (air only) or venting connections (NPT mount only).
- 1/4 in. NPT or flange mount models for direct mounting to Honeywell Integrated Valve Train.
- Optional switch position indicator lamp available.
- IP54 enclosure standard.
- Ranges: 0.4 to 5 in.wc, 3 to 21 in.wc, 12 to 60 in.wc or 1.5 to 7 psi.
- Surge orifice.

Dimension Diagrams



1 C6097A BREAKS C-NO, MAKES C-NC ON PRESSURE FALL. MANUAL RESET MODELS LOCK OUT.

2 C6097B BREAKS C-NC, MAKES C-NO ON PRESSURE RISE AND LOCKS OUT.

M17123

Application: Safety devices used in positive-pressure or differential-pressure systems to sense gas or air pressure changes

Differential Type: Additive

Mounting: 1/4 in. NPT internal thread

Piping Connections, Vent or Low pressure: 1/8 in. NPT internal thread

Temperature Ratings: -40 F to 140 F (-40 C to 60 C)

Approvals:

Canadian Standards Association: Certified

Industrial Risk Insurers: Acceptable

Factory Mutual: Approved

Other: CSD-1 AFB: Acceptable

Switch Contact Ratings:

120 Vac	240 Vac
3.0 AFL, 18.0 ALR, 5.0 A resistive	3.0 AFL, 18.0 ALR, 5.0 A resistive

Pressure Switches

Product Number	Operating Pressure Range		Pressure Differential		Switch Operation	Pressure Differential				Switching Action
	(psi)	(kPa)	(psi)	(kPa)		Nominal		Maximun		
	(psi)	(kPa)	(psi)	(kPa)		(psi)	(kPa)	(psi)	(kPa)	
C6097A1004	0.4 in. wc to 5 in. wc	0.10 kPa to 1.25 kPa	—	—	Auto recycle	0.16 in. wc	0.04 kPa	0.24 in. wc	0.24 in. wc	Break N.O. to C. on pressure fall
C6097A1012	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint:	max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1020	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint:	max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1038	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint:	max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1046	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint:	max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1053	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	—	—	Auto recycle	0.24 in. wc	0.06 kPa	0.48 in. wc	0.48 in. wc	Break N.O. to C. on pressure fall
C6097A1061	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	—	—	Auto recycle	0.24 in. wc	0.06 kPa	0.48 in. wc	0.48 in. wc	Break N.O. to C. on pressure fall
C6097A1079	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	—	—	Auto recycle	1.1 in. wc	0.27 kPa	2.4 in. wc	2.4 in. wc	Break N.O. to C. on pressure fall
C6097A1087	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	—	—	Auto recycle	1.1 in. wc	0.27 kPa	2.4 in. wc	2.4 in. wc	Break N.O. to C. on pressure fall
C6097A1095	0.4 in. wc to 5 in. wc	0.10 kPa to 1.25 kPa	max. 0.6 in. wc @ min. setpoint; max. 0.25 in. wc @ max. setpoint	max. 0.15 kPa @ min. setpoint; max. 0.25 kPa @ max. setpoint	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1103	1.5 psi to 7 psi	10.3 kPa to 48 kPa	max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint	max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1111	1.5 psi to 7 psi	10.3 kPa to 48 kPa	max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint	max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint	Manual Reset	—	—	—	—	Break N.O. to C. on pressure fall
C6097A1129	1.5 psi to 7 psi	10.3 kPa to 48 kPa	—	—	Auto recycle	0.1 psi	0.69 kPa	0.3 psi	2.07 kPa	Break N.O. to C. on pressure fall
C6097A1137	1.5 psi to 7 psi	10.3 kPa to 48 kPa	—	—	Auto recycle	0.1 psi	0.69 kPa	0.3 psi	2.07 kPa	Break N.O. to C. on pressure fall
C6097A1210	0.4 in. wc to 5 in. wc	0.10 kPa to 1.25 kPa	—	—	Auto recycle	0.16 in. wc	0.04 kPa	0.24 in. wc	0.24 in. wc	Break N.O. to C. on pressure fall
C6097A1228	0.4 in. wc to 5 in. wc	0.10 kPa to 1.25 kPa	—	—	Manual Reset	0.16 in. wc	0.04 kPa	0.24 in. wc	0.24 in. wc	Break N.O. to C. on pressure fall

Pressure Switches

Product Number	Operating Pressure Range		Pressure Differential		Switch Operation	Pressure Differential				Switching Action
	(psi)	(kPa)	(psi)	(kPa)		Nominal		Maximum		
						(psi)	(kPa)	(psi)	(kPa)	
C6097B1002	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint:	max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1010	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	max. 10 in. wc @ min. setpoint; max. 12 in. wc @ max. setpoint:	max. 2.5 kPa @ min. setpoint; max. 3.0 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1028	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint:	max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1036	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	max. 2.4 in. wc @ min. setpoint; max. 4.2 in. wc @ max. setpoint:	max. 0.60 kPa @ min. setpoint; max. 1.05 kPa @ max. setpoint:	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1044	1.5 psi to 7 psi	10.3 kPa to 48 kPa	max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint	max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1051	1.5 psi to 7 psi	10.3 kPa to 48 kPa	max. 1.1 in. wc @ min. setpoint; max. 1.4 in. wc @ max. setpoint	max. 7.6 kPa @ min. setpoint; max. 9.6 kPa @ max. setpoint	Manual Reset	—	—	—	—	Break N.C. to C. on pressure rise.
C6097B1069	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	—	—	Auto recycle	0.24 in. wc	0.06 kPa	0.48 in. wc	0.48 in. wc	Break N.C. to C. on pressure rise.
C6097B1077	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	—	—	Auto recycle	1.1 in. wc	0.27 kPa	2.4 in. wc	2.4 in. wc	Break N.C. to C. on pressure rise.
C6097B1085	12 in. wc to 60 in. wc	3.0 kPa to 15 kPa	—	—	Auto recycle	1.1 in. wc	0.27 kPa	2.4 in. wc	2.4 in. wc	Break N.C. to C. on pressure rise.
C6097B1093	1.5 psi to 7 psi	10.3 kPa to 48 kPa	—	—	Auto recycle	0.1 psi	0.69 kPa	0.3 psi	2.07 kPa	Break N.C. to C. on pressure rise.
C6097B1101	1.5 psi to 7 psi	10.3 kPa to 48 kPa	—	—	Auto recycle	0.1 psi	0.69 kPa	0.3 psi	2.07 kPa	Break N.C. to C. on pressure rise.
C6097B1119	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	—	—	Auto recycle	0.24 in. wc	0.06 kPa	0.48 in. wc	0.48 in. wc	Break N.C. to C. on pressure rise.

Pressure Switches

C645A,B Gas/Air Pressure Switches; C645C,D Air Pressure Switches; C645E Distillate Fuel Oil Pressure Switch



Application: Natural Gas, Liquid Propane (LP) or Air Switch

Mounting: 1/4 in. NPT internal thread

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Piping Connections, Vent or Low pressure: 1/8 in. NPT internal thread

Electrical: Screw terminals

Temperature Ratings: -20 F to 125 F (-29 C to 52 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 140-A-2

Industrial Risk Insurers: Acceptable

Factory Mutual: Approved: Report No. 19268, 13233-S3

Underwriters Laboratories, Inc: Listed: File No. MP2168, Guide No. MFHX

Switch Contact Ratings:

	120 Vac	240 Vac
C645A,B,D,E	7.4 AFL, 44.4 ALR	3.7 AFL, 22.2 ALR
C645C	8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR

Accessories:

137637B Cover with Window - C645A

137637C Cover with Window - C645B

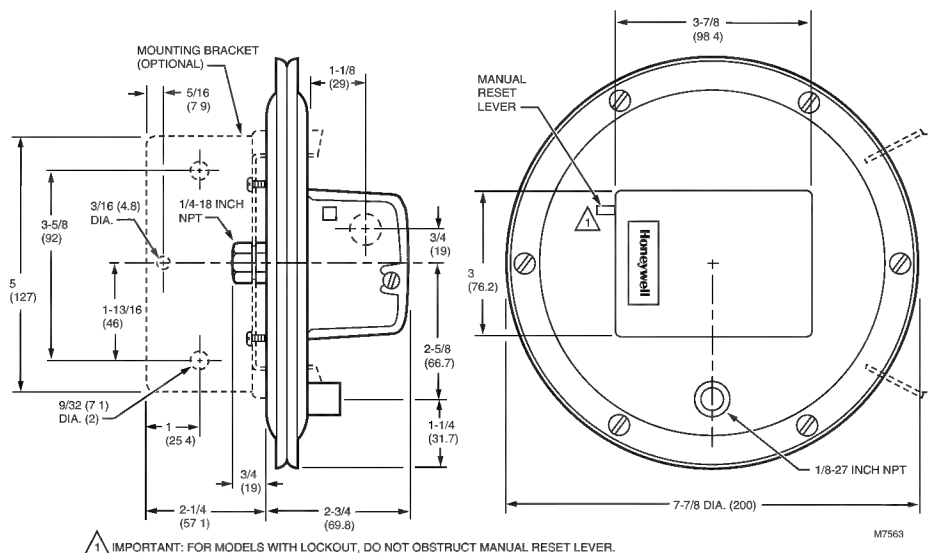
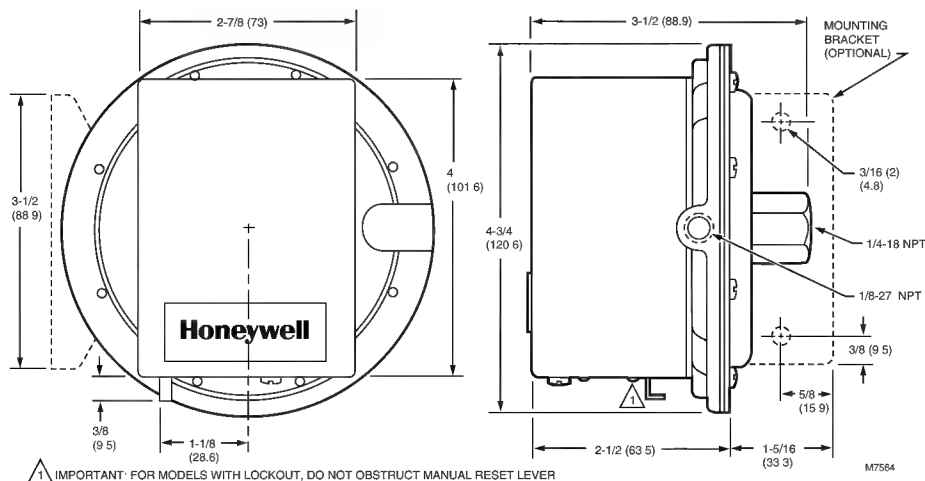
15865AC Mounting Bracket Assembly - C645A, B, D.

112657A C645 Mounting Bracket Assembly . (Includes screws)

Positive- or differential limit controls.

- Spdt diaphragm operated snap-acting Micro-Switch™ mechanism.
- C645E models for use with only distillate fuel; not with natural or LP gases.

Dimension Diagrams



Pressure Switches

Product Number	Operating Pressure Range		Maximum Sustained Operating Pressure		Switch Operation	Pressure Differential				Switching Action	Includes
						Nominal		Maximum			
	(psi)	(kPa)	(psi)	(kPa)		(psi)	(kPa)	(psi)	(kPa)		
C645A1006	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	—
C645A1022	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645A1030	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645A1055	5 in. wc to 35 in. wc	1.2 kPa to 8.7 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	4.0 in. wc	4.0 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645A1063	5 in. wc to 35 in. wc	1.2 kPa to 8.7 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	4.0 in. wc	4.0 in. wc	SPDT break on pressure fall	Less cover
C645A1097	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	—
C645A1105	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645A2004	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	Position indicator, cover window, and meet ANSI miswiring requirements
C645B1013	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT make on pressure fall	Position indicator and cover window
C645B1039	5 in. wc to 35 in. wc	1.2 kPa to 8.7 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	4.0 in. wc	4.0 in. wc	SPDT make on pressure fall	Position indicator and cover window
C645B1047	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT make on pressure fall	Position indicator and cover window
C645B2003	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Manual Reset	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT make on pressure fall	Position indicator, cover window, and meet ANSI miswiring requirements
C645C1004	0.6 in. wc to 5.3 in. wc	0.15 kPa to 1.3 kPa	1.5 psi	10.3 kPa	Auto recycle	0.2 in. wc	0.05 kPa	0.8 in. wc	0.8 in. wc	SPDT break on pressure fall	Cover Window
C645C1020	0.6 in. wc to 5.3 in. wc	0.15 kPa to 1.3 kPa	1.5 psi	10.3 kPa	Auto recycle	0.2 in. wc	0.05 kPa	0.8 in. wc	0.8 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645C1038	0.6 in. wc to 5.3 in. wc	0.15 kPa to 1.3 kPa	1.5 psi	10.3 kPa	Manual Reset	0.2 in. wc	0.05 kPa	0.8 in. wc	0.8 in. wc	SPDT break on pressure fall	Position indicator and cover window
C645D1029	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	—
C645D1052	2.0 in. wc to 20.0 in. wc	0.5 kPa to 5.0 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break on pressure fall	—
C645E1002	3 in. wc to 21 in. wc	0.7 kPa to 5.2 kPa	5.0 psi	34.5 kPa	Auto recycle	1.0 in. wc	0.2 kPa	3.0 in. wc	3.0 in. wc	SPDT break R-W, make R-B on pressure fall	—

Pressuretrol Controllers

L404A,B,C,D,F,N; L604 Pressuretrol® Controllers

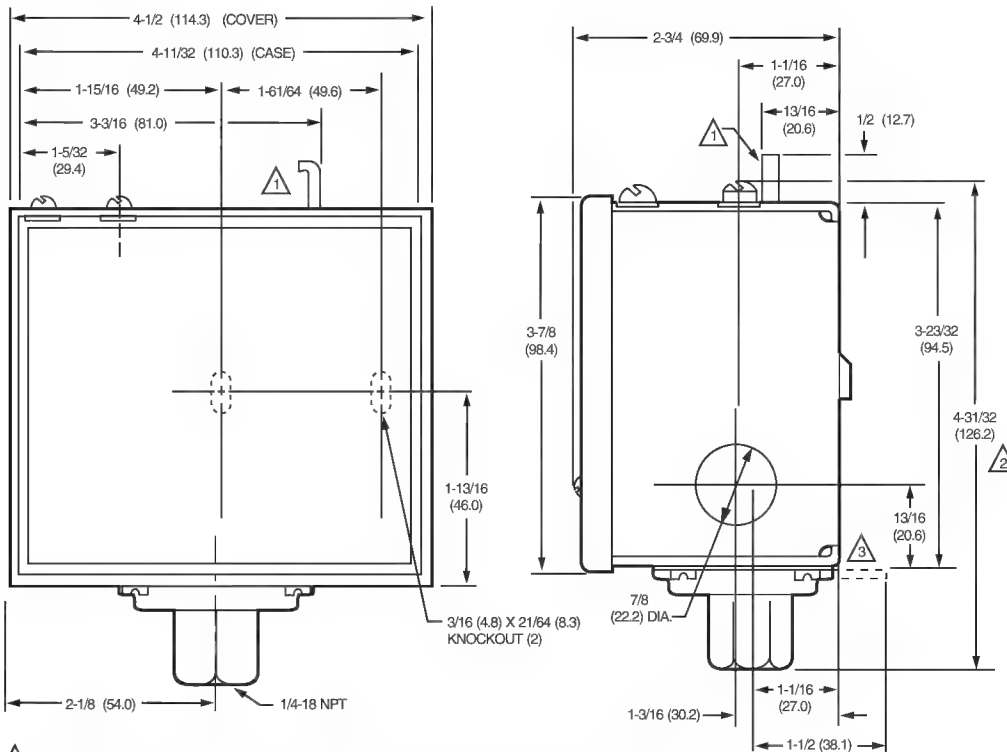


Provide operating control, automatic or manual reset limit protection for pressure systems up to 300 psi (2068 kPa)

- Use with steam, air, noncombustible gases, or other fluids noncorrosive to pressure sensing element.
- Provide dustproof, trouble-free mercury switching; L404F has snap-acting switching.
- Trip-free mechanism on manual reset models so the limit function of the controller cannot be defeated by jamming the reset lever.
- Adjustments are made by screws on top of case.
- Mount using 1/4 in. NPT female threads or surface mount through base of case.

Dimension Diagrams

L404A-D,F; L604A,L



1 RESET LEVER (ON MANUAL RESET MODELS ONLY.)

2 THIS DIMENSION IS 4-27/32 IN. (123.0 MM) ON L604 MODELS WITH A 2 TO 15 PSI (14 TO 1.0 kg/cm² (14 TO 103 kPa)) OPERATING RANGE, AND 5-3/4 IN. (146.0 MM) ON L604 MODELS WITH A 20 TO 300 PSI (1.4 TO 20.7 kg/cm² (138 TO 2068 kPa)) OPERATING RANGE.

3 ONLY ON L604 MODELS WITH A 2 TO 15 PSI (14 TO 1.0 kg/cm² (14 TO 103 kPa)) OPERATING RANGE.

M8933

Application: Provide control of steam, air, non-combustible gases or non-corrosive fluids

Differential Type: Subtractive

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Temperature Ratings: -35 F to 150 F (-37 C to 66 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E-O

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP466, Guide No. MBPR

Switch Contact Ratings:

	120 Vac	120 Vdc	240 Vac	240 Vdc
L404A,B,C	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.4 AFL, 24.0 ALR, 5.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.2 AFL, 12.0 ALR, 2.0 A resistive
L404F	8.0 AFL, 48.0 ALR, 10.0 A resistive	—	5.1 AFL, 30.6 ALR, 5.0 A resistive	—
L604A,L	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.0 AFL, 20.0 ALR, 8.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.0 AFL, 10.0 ALR, 4.0 A resistive
L604N	8.0 AFL, 48.0 ALR	—	5.1 AFL, 30.6 ALR	—

Accessories:

33312B Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.

Pressuretrol Controllers

4074BWJ Pressure Control/Limits, Limit Stop Assembly - to limit set point. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench.

Product Number	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure		Switch Operation	Switching Action	Includes
	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)			
L404A1354	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	50 psi	345 kPa	Auto recycle	SPST break on pressure rise	—
L404A1370	5 psi to 50 psi	35 kPa to 345 kPa	4 psi to 12 psi	28 kPa to 83 kPa	85 psi	586 kPa	Auto recycle	SPST break on pressure rise	—
L404A1396	10 psi to 150 psi	69 kPa to 1034 kPa	8 psi to 16 psi	55 kPa to 110 kPa	225 psi	1551 kPa	Auto recycle	SPST break on pressure rise	—
L404A1404	20 psi to 300 psi	138 kPa to 2068 kPa	15 psi to 40 psi	103 kPa to 276 kPa	350 psi	2413 kPa	Auto recycle	SPST break on pressure rise	Siphon Loop
L404A1636	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	25 psi	345 kPa	Auto recycle	SPST break on pressure rise	—
L404B1296	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	50 psi	345 kPa	Auto recycle	SPST make on pressure rise	Siphon Loop
L404B1304	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	50 psi	345 kPa	Auto recycle	SPST make on pressure rise	—
L404B1320	5 psi to 50 psi	35 kPa to 345 kPa	4 psi to 12 psi	28 kPa to 83 kPa	85 psi	586 kPa	Auto recycle	SPST make on pressure rise	—
L404B1346	10 psi to 150 psi	69 kPa to 1034 kPa	8 psi to 16 psi	55 kPa to 110 kPa	225 psi	1551 kPa	Auto recycle	SPST make on pressure rise	—
L404B1353	20 psi to 300 psi	138 kPa to 2068 kPa	15 psi to 40 psi	103 kPa to 276 kPa	350 psi	2413 kPa	Aut recycle	SPST make on pressure rise	—
L404B1361	2 psi to 15 psi	14 kPa to 103 kPa	1 psi to 6 psi	7 kPa to 41 kPa	25 psi	172 kPa	Auto recycle	SPST make on pressure rise	—
L404B1577	2 psi to 15 psi	14 kPa to 103 kPa	1 psi to 6 psi	7 kPa to 41 kPa	25 psi	172 kPa	Auto recycle	SPST make on pressure rise	—
L404C1113	5 psi to 50 psi	35 kPa to 345 kPa	—	—	85 psi	586 kPa	Manual Reset	SPST break on pressure rise	Siphon Loop
L404C1139	20 psi to 300 psi	138 kPa to 2068 kPa	—	—	350 psi	2413 kPa	Manual Reset	SPST break on pressure rise	Siphon Loop
L404C1147	2 psi to 15 psi	14 kPa to 103 kPa	—	—	50 psi	345 kPa	Manual Reset	SPST break on pressure rise	—
L404C1154	5 psi to 50 psi	35 kPa to 345 kPa	—	—	85 psi	586 kPa	Manual Reset	SPST break on pressure rise	—
L404C1162	10 psi to 150 psi	69 kPa to 1034 kPa	—	—	225 psi	1551 kPa	Manual Reset	SPST break on pressure rise	—
L404F1060	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	25 psi	345 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	Siphon Loop
L404F1078	5 psi to 50 psi	35 kPa to 345 kPa	6 psi to 14 psi	41 kPa to 97 kPa	85 psi	586 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	Siphon Loop
L404F1094	20 psi to 300 psi	138 kPa to 2068 kPa	20 psi to 50 psi	138 kPa to 345 kPa	350 psi	2413 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	Siphon Loop
L404F1102	10 psi to 150 psi	69 kPa to 1034 kPa	10 psi to 22 psi	60 kPa to 152 kPa	225 psi	1551 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	—
L404F1227	10 psi to 150 psi	69 kPa to 1034 kPa	10 psi to 22 psi	60 kPa to 152 kPa	225 psi	1551 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	BSPT ground screw and European Enclosure
L404F1235	20 psi to 300 psi	138 kPa to 2068 kPa	20 psi to 50 psi	138 kPa to 345 kPa	350 psi	2413 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	BSPT ground screw and European Enclosure
L404F1243	5 psi to 50 psi	35 kPa to 345 kPa	6 psi to 14 psi	41 kPa to 97 kPa	85 psi	586 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	BSPT ground screw and European Enclosure
L404F1300	60 psi to 180 psi	—	6 psi	41 kPa	225	1151 kPa	Auto recycle	SPDT snap action, make R-W, break R-B on pressure rise	BSPT ground screw and European Enclosure

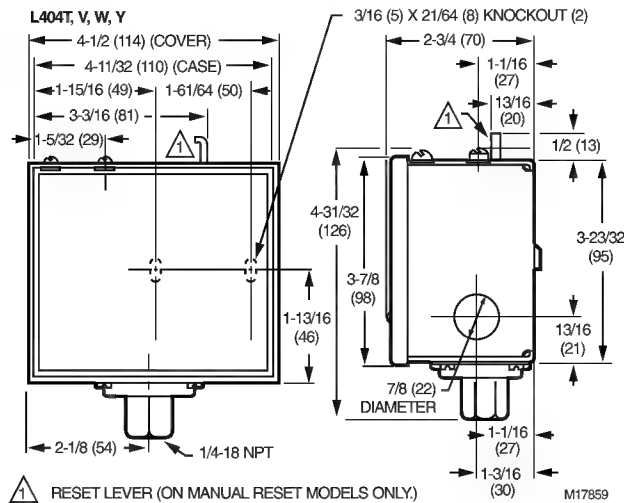
Pressuretrol Controllers

Product Number	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure		Switch Operation	Switching Action	Includes
	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)			
L604A1169	2 psi to 15 psi	14 kPa to 103 kPa	2 psi to 6 psi	14 kPa to 41 kPa	25 psi	172 kPa	Auto recycle	Isolated SPST (two) make R1-W Break R2-B on pressure rise	Siphon Loop
L604A1177	5 psi to 50 psi	35 kPa to 345 kPa	4 psi to 12 psi	28 kPa to 83 kPa	85 psi	586 kPa	Auto recycle	Isolated SPST (two) make R1-W Break R2-B on pressure rise	Siphon Loop
L604A1185	10 psi to 150 psi	69 kPa to 1034 kPa	8 psi to 16 psi	55 kPa to 110 kPa	225 psi	1551 kPa	Auto recycle	Isolated SPST (two) make R1-W Break R2-B on pressure rise	Siphon Loop
L604A1193	20 psi to 300 psi	138 kPa to 2068 kPa	15 psi to 40 psi	103 kPa to 276 kPa	350 psi	2413 kPa	Auto recycle	Isolated SPST (two) make R1-W Break R2-B on pressure rise	Siphon Loop
L604L1035	2 psi to 15 psi	14 kPa to 103 kPa	—	—	25 psi	172 kPa	Manual Reset	SPDT make R-W, break R-B on pressure rise	Siphon Loop
L604N1009	10 psi to 150 psi	69 kPa to 1034 kPa	7 psi	48.2 kPa	225 psi	1551 kPa	Auto recycle	SPDT (two) break R-B simultaneously	Siphon Loop
L404A1651	0.5 psi to 5.0 psi	.05 KGcm to .35 KGcm	—	—	5.0 psi	34.5 kPa	Auto recycle	SPST break on pressure rise	—

L404T,V,W Pressuretrol® Limit Controllers



Dimension Diagrams



Application: High oil pressure limit switch
Differential Type: Subtractive

Oil pressure sensing devices for use on oil burner systems using any type of fuel oil, including heavy pretreated oils.

- Provide dustproof, trouble-free mercury switching.
- Clear plastic cover allows observation of the pressure settings and switch action.
- Siphon loop provides thermal buffer to diaphragm.
- Trip-free mechanism on manual reset models so the limit function of the controller cannot be defeated by jamming the reset lever.
- Adjustments are made by screws on top of case (under a protective cover).
- Mount using 1/4 in. NPT female threads or surface mount through base of case.

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Includes: Siphon Loop

Temperature Ratings: -35 F to 150 F (-37 C to 66 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E-O

Industrial Risk Insurers: Acceptable

Factory Mutual: Approved: Report No. 26036

Underwriters Laboratories, Inc: Listed: File No. MP2168, Guide No. MFHX

Switch Contact Ratings:

120 Vac	120 Vdc	240 Vac	240 Vdc
8.0 AFL, 48.0 ALR, 10.0 A resistive	2.4 AFL, 24.0 ALR, 5.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.2 AFL, 12.0 ALR, 2.0 A resistive

Accessories:

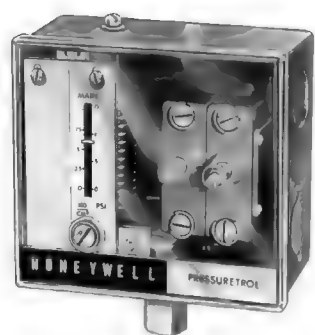
33312B Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.

4074BWJ Pressure Control/Limits, Limit Stop Assembly - to limit set point. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench.

Product Number	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure		Switch Operation	Switching Action
	(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)		
L404T1022	10 psi to 50 psi	69 kPa to 345 kPa	4 psi to 8 psi	28 kPa to 55 kPa	85 psi	586 kPa	Auto recycle	SPST break on pressure rise
L404T1030	25 psi to 150 psi	172 kPa to 1034 kPa	8 psi to 16 psi	50 kPa to 110 kPa	225 psi	1551 kPa	Auto recycle	SPST break on pressure rise
L404V1046	25 psi to 150 psi	172 kPa to 1034 kPa	8 psi to 16 psi	50 kPa to 110 kPa	225 psi	1551 kPa	Auto recycle	SPST make on pressure fall
L404V1053	10 psi to 50 psi	69 kPa to 345 kPa	4 psi to 8 psi	28 kPa to 55 kPa	85 psi	586 kPa	Auto recycle	SPST make on pressure fall
L404W1037	25 psi to 150 psi	172 kPa to 1034 kPa	8 psi	55 kPa	225 psi	1551 kPa	Manual Reset	SPST break on pressure rise

Pressuretrol Controllers

L4079 Pressuretrol® Limit Controllers



High pressure limit switches.

- Stainless steel diaphragm for use with steam, air, noncombustible gases and fluids noncorrosive to stainless steel.
- Micro Switch™ snap-acting switches open automatically on pressure rise; must be manually reset.
- Includes 14026 Siphon Loop.
- Mount using 1/4 in. NPT female fitting on diaphragm assembly or surface mount through back of case.

Dimensions, Approximate: 5 in. high; 4 1/2 in. wide, 3 1/2 in. deep. (127 mm high; 114 mm wide, 89 mm deep.)

Application: Provide limit control of steam, air, non-combustible gases or non-corrosive fluids

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Temperature (max. ambient): 150 F (66 C)

Approvals:

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP466, Guide No. MBPR

Switch Contact Ratings:

120 Vac	240 Vac
9.8 AFL, 58.8 ALR	4.9 AFL, 29.4 ALR

Accessories:

33312B Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.

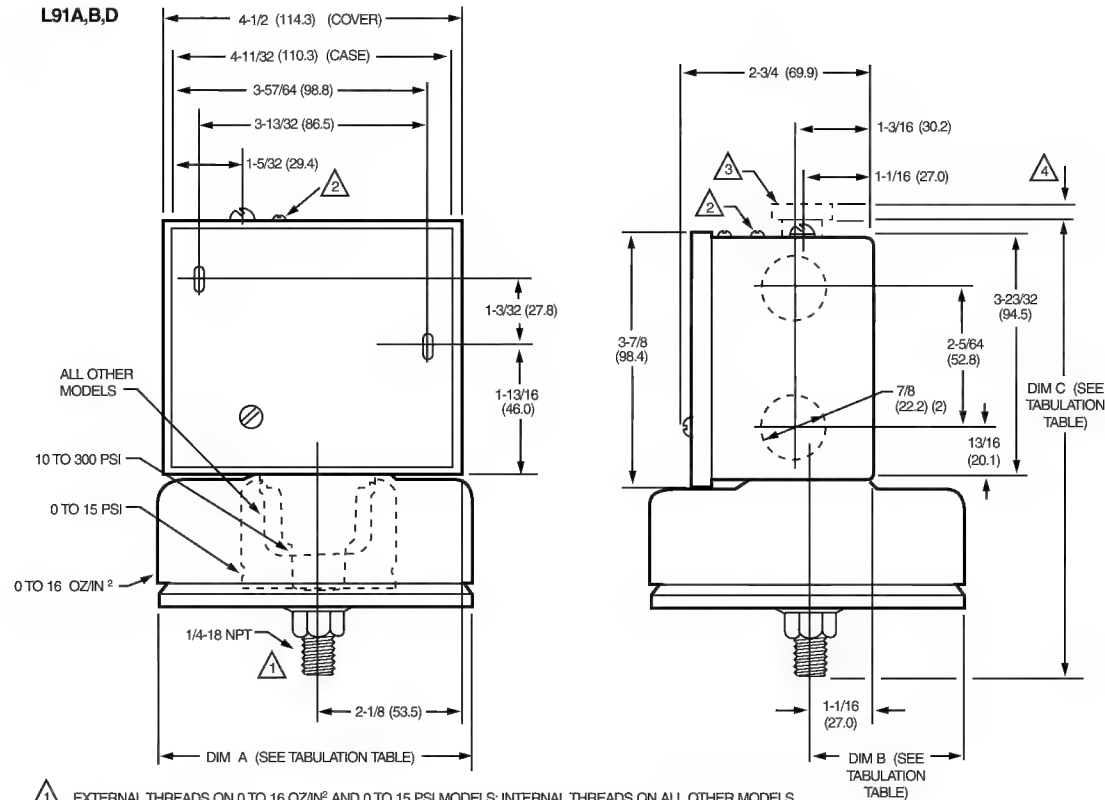
4074BWJ Pressure Control/Limits, Limit Stop Assembly - to limit set point. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench.

Product Number	Operating Pressure Range		Maximum Sustained Operating Pressure		Switch Operation	Switching Action	Includes
	(psi)	(kPa)	(psi)	(kPa)			
L4079A1035	2 psi to 15 psi	14 kPa to 103 kPa	25 psi	172 kPa	Manual Reset	SPST (two) break simultaneously on pressure rise	Siphon Loop
L4079A1050	10 psi to 150 psi	69 kPa to 1034 kPa	225 psi	1551 kPa	Manual Reset	SPST (two) break simultaneously on pressure rise	Siphon Loop
L4079B1033	2 psi to 15 psi	14 kPa to 103 kPa	25 psi	172 kPa	Manual Reset	SPST break on pressure rise	Siphon Loop

L91 Proportional Pressuretrol® Controllers



Dimension Diagrams

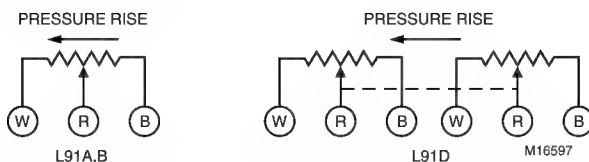


- 1 EXTERNAL THREADS ON 0 TO 16 OZ/IN² AND 0 TO 15 PSI MODELS; INTERNAL THREADS ON ALL OTHER MODELS. SOME MODELS ARE ALSO AVAILABLE WITH 1/4-19 BSP-TR INTERNAL THREADS; SEE TABLE 1.
- 2 PROPORTIONING RANGE ADJUSTING SCREW ON L91B,D MODELS ONLY.
- 3 33312B KNURLED ADJUSTMENT SCREW KNOB, 7/8 IN. [22.2 MM] DIAMETER. KNOB IS INCLUDED WITH 10 TO 300 PSI [0.07 TO .07 MPa] MODELS; OPTIONAL ACCESSORY FOR OTHER MODELS.
- 4 FOR 10 TO 300 PSI [0.07 TO 2.07 MPa] MODELS. DIM C INCLUDES THE KNURLED ADJUSTMENT KNOB.

TABULATION OF DIMENSIONS A, B, AND C

OPERATING RANGE		DIM A		DIM B		DIM C	
CUSTOMARY UNITS	METRIC UNITS	IN.	MM	IN.	MM	IN.	MM
0 TO 16 OZ/IN ²	0 TO 7 kPa	4 - 7/8	123.8	2 - 7/16	61.9	7 - 1/32	178.6
0 TO 15 PSI	0 TO 103 kPa	2 - 7/16	61.9	1 - 7/32	31.0	6 - 7/8	174.6
2 TO 50 PSI	14 TO 345 kPa	1 - 5/8	41.3	13/16	20.6	5 - 3/4	146.1
5 TO 150 PSI	0.03 TO 1.03 MPa	1 - 5/8	41.3	13/16	20.6	5 - 3/4	146.1
10 TO 300 PSI	0.07 TO 2.07 MPa	1 - 1/4	31.8	5/8	15.9	6 - 1/16 4	154.0 4

M8524A



Pressuretrol Controllers

Dimensions, Approximate: 6 7/8 in. high, 4 1/2 in. wide, 2 7/8 in. deep
(175 mm high, 114 mm wide, 73 mm deep)

Application: Modulating pressure control for regulation of liquid, air, or other non-corrosive gases.

Mounting: optional surface mount through back of case

Piping Connections, Main or High Pressure: 1/4 in. NPT external thread

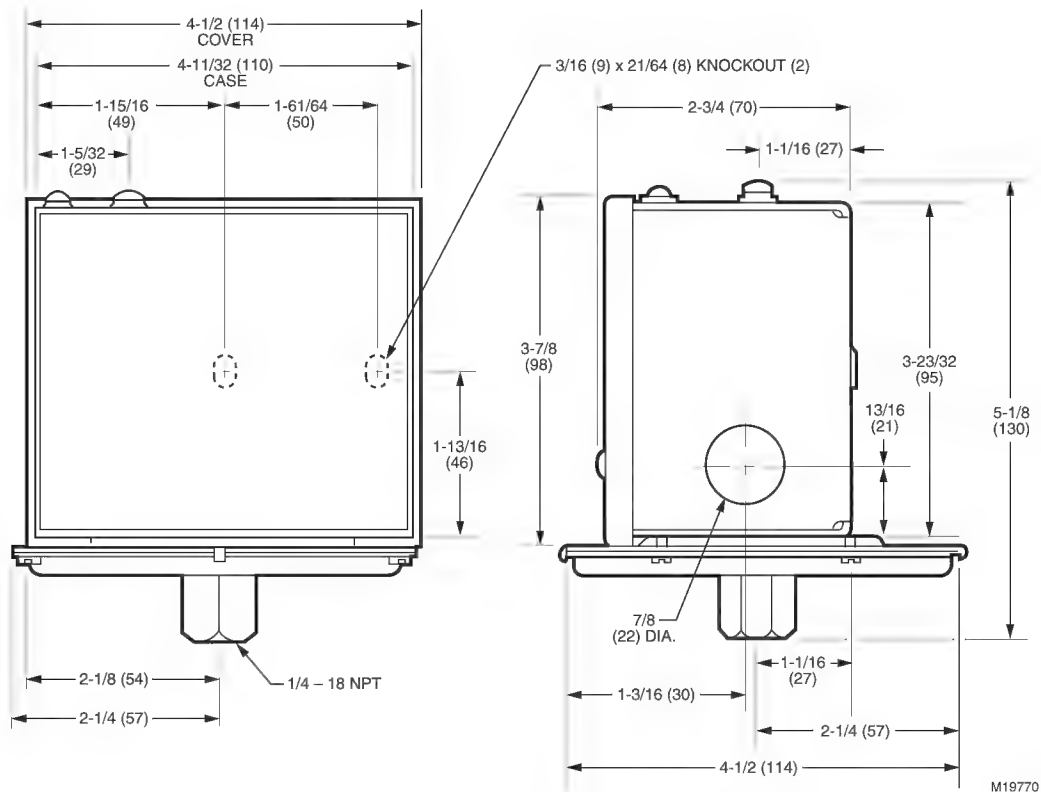
Temperature Ratings: 32 F to 150 F (0 C to 66 C)

Product Number	Modulating Output	Operating Pressure Range		Pressure Differential		Maximum Sustained Operating Pressure		Switch Operation	Includes
		(psi)	(kPa)	(psi)	(kPa)	(psi)	(kPa)		
L91A1037	Single potentiometer, 140 ohms	0 psi to 15 psi	0 kPa to 103 kPa	0.5 psi	3.4 kPa	25 psi	172 kPa	Modulating	—
L91A1052	Single potentiometer, 140 ohms	5 psi to 150 psi	34 kPa to 1034 kPa	5 psi	34 kPa	225 psi	1551 kPa	Modulating	—
L91A1078	Single potentiometer, 140 ohms	10 psi to 300 psi	69 kPa to 2068 kPa	12 psi	83 kPa	325 psi	2241 kPa	Modulating	Siphon Loop
L91A1136	Single potentiometer, 140 ohms	10 psi to 300 psi	69 kPa to 2068 kPa	12 psi	83 kPa	325 psi	2241 kPa	Modulating	Siphon Loop
L91B1019	Single potentiometer, 140 ohms	0 oz/in ² to 16 oz/in ²	0 kPa to 6.9 kPa	2 oz/in ² to 38 oz/in ²	0.9 kPa to 16.4 kPa	6 psi	41 kPa	Modulating	—
L91B1035	Single potentiometer, 140 ohms	0 psi to 15 psi	0 kPa to 103 kPa	1 1/2 psi to 12 psi	10 kPa to 83 kPa	25 psi	172 kPa	Modulating	—
L91B1043	Single potentiometer, 140 ohms	2 psi to 50 psi	14 kPa to 345 kPa	5 psi to 32 psi	34 kPa to 221 kPa	85 psi	586 kPa	Modulating	—
L91B1050	Single potentiometer, 140 ohms	5 psi to 150 psi	34 kPa to 1034 kPa	5 psi to 23 psi	35 kPa to 160 kPa	225 psi	1551 kPa	Modulating	—
L91B1068	Single potentiometer, 140 ohms	10 psi to 300 psi	69 kPa to 2068 kPa	28 psi to 110 psi	193 kPa to 758 kPa	325 psi	2241 kPa	Modulating	Siphon Loop
L91B1241	Single potentiometer, 140 ohms	10 psi to 300 psi	69 kPa to 2068 kPa	12 psi to 48 psi	85 kPa to 330 kPa	325 psi	2241 kPa	Modulating	Siphon Loop
L91D1015	Dual potentiometer, 140 ohms	0 psi to 15 psi	0 kPa to 103 kPa	1 1/2 psi to 12 psi	10 kPa to 83 kPa	25 psi	172 kPa	Modulating	—
L91D1031	Dual potentiometer, 140 ohms	5 psi to 150 psi	34 kPa to 1034 kPa	11 psi to 52 psi	76 kPa to 359 kPa	225 psi	1551 kPa	Modulating	—
L91D1049	Dual potentiometer, 140 ohms	10 psi to 300 psi	69 kPa to 2068 kPa	28 psi to 110 psi	193 kPa to 758 kPa	325 psi	2241 kPa	Modulating	Siphon Loop

L408; L608 Vaporstat® Controllers



Dimension Diagrams



Dimensions, Approximate: 5 1/8 in. high, 4 1/2 in. wide, 4 1/2 in. deep. (130 mm high, 114 mm wide, 114 mm deep.)

Application: Provide operating control and automatic limit protection for pressure systems with pressures up to 4 psi (8 kPa)

Differential Type: Subtractive

Mounting: 1/4 in. NPT internal thread or surface mount through back of case

Piping Connections, Main or High Pressure: 1/4 in. NPT internal thread

Temperature Ratings: -35 F to 150 (-37 C to 66 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. 400-E-O

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Listed: File No. MP466, Guide No. MBPR

Provide operating control and automatic high limit protection for vapor heating systems with pressures up to 4 psi (8 kPa)

- Stainless steel diaphragm for use with liquids, air, noncombustible gases, ammonia, oxygen, distilled water and similar media.
- Provide dustproof, trouble-free mercury switching.
- Clear plastic cover allows observation of the pressure settings, leveling indicator and switch action.
- Include 14026 Siphon Loop.
- Integral plumb bob for accurate leveling at installation.
- Mount using hexagonal fitting with 1/4 in. NPT internal threads for direct mounting to the 14026 Steam Trap (siphon loop), which is included.

Switch Contact Ratings:

	120 Vac	120 Vdc	240 Vac	240 Vdc
L408	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.4 AFL, 24.0 ALR, 5.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.0 AFL, 10.0 ALR, 2.0 A resistive
L608	8.0 AFL, 48.0 ALR, 10.0 A resistive	2.0 AFL, 20.0 ALR, 8.0 A resistive	5.1 AFL, 30.6 ALR, 5.0 A resistive	1.0 AFL, 10.0 ALR, 2.0 A resistive

Accessories:

33312B Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.

4074BWJ Pressure Control/Limits, Limit Stop Assembly - to limit set point. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench.

Vaporized Controllers

Product Number	Operating Pressure Range		Pressure Differential		Switch Operation	Switching Action	Includes
	(psi)	(kPa)	(psi)	(kPa)			
L408A1132	0 oz/in2 to 16 oz/in2	0 kPa to 6.9 kPa	2 oz/in2 to 16 oz/in2	0.9 kPa to 6.9 kPa	Auto recycle	SPST break on pressure rise	Siphon Loop
L408A1157	0 psi to 4 psi	0 kPa to 28 kPa	2 oz/in2 to 16 oz/in2	0.9 kPa to 6.9 kPa	Auto recycle	SPST break on pressure rise	Siphon Loop
L408B1131	0 oz/in2 to 16 oz/in2	0 kPa to 6.9 kPa	2 oz/in2 to 16 oz/in2	0.9 kPa to 6.9 kPa	Auto recycle	SPST make on pressure rise	Siphon Loop
L408B1149	0 psi to 4 psi	0 kPa to 28 kPa	4 oz/in2 to 16 oz/in2	1.7 kPa to 6.9 kPa	Auto recycle	SPST make on pressure rise	Siphon Loop
L608A1046	0 oz/in2 to 16 oz/in2	0 kPa to 6.9 kPa	4 oz/in2 to 16 oz/in2	1.7 kPa to 6.9 kPa	Auto recycle	SPDT break R-B, make R-W on pressure rise	Siphon Loop
L608A1053	0 psi to 4 psi	0 kPa to 28 kPa	4 oz/in2 to 16 oz/in2	1.7 kPa to 6.9 kPa	Auto recycle	SPDT break R-B, make R-W on pressure rise	Siphon Loop

Pressure Controls and Limits Accessories

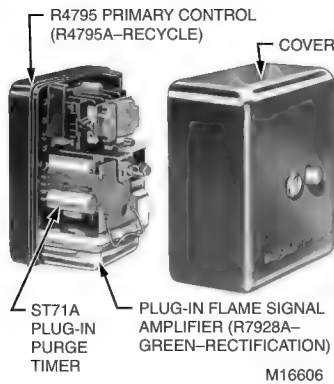
OS Number	Description	Used With
14026	Steam Trap Siphon Loop for L404, L604 and L91	L404, L91, L604
106729	C437, C637 Glass Lens, 6 in. diameter	C437, C637
106747	C437, C637 Lens Retainer manufactured before 1973	C437, C637
129178	L404, L604, Plain Thermoplastic Cover, no labels or mounting screw	L404, L604
137632	C437, C637 Paper Lens Gasket	C437, C637
139870	C437, C637 Lens Gasket for Rainproof Models	C437, C637
112657A	C645 Mounting Bracket Assembly . (Includes screws)	C645
127120A	P455 Potentiometer	P455
137637B	Cover with Window - C645A	C645A
137637C	Cover with Window - C645B	C645B
139870A	C437, C637 Lens and Gasket for Rainproof Devices	C437, C637
15865AC	Mounting Bracket Assembly - C645A, B, D.	C645
209731A	Siphon Loop for P7810C, D	P7810C, P7810D
23176CB	L91 Potentiometer - 135 ohm	L91
23176CF	L91 Potentiometer - 135 ohm	L91
32003039-001	C6097 Lamp Kit, Position Indication	C6097
32003040-001	C6097 Cover, Recycle Model	C6097
32003041-001	C6097 Cover, Manual Reset Model	C6097
33312B	Pressure Control/Limits, Knurled Adjustment knob-with set screw. Fits head of main adjusting screw to permit adjusting without screwdriver.	L404, L604
4074BWJ	Pressure Control/Limits, Limit Stop Assembly - to limit set point. Includes 129564 Range Stop, 107194 Range Stop Screw and 23466 Wrench.	L404, L604
4074BWK	C437, C637 Surface Mounting Bracket and Self-Tapping Screw	C437, C637
4074EVP	P7810 Locking Door Wrench	P7810
4074EWD	P7810 Mounting Bracket and Mounting Screws (6)	P7810
110462/0021	Mounting Bracket for Surface Mounting of C647A or C447A or C447B	C647A, C447A, C447B
107194/0047	Screw for L404 Range Stop	L404
118733/0021	Retaining clip for C437 and C637	C437, C637
129564/0021	Range Stop for L404	L404
23226D	L91 Wiper Blade Assembly	L91

For All Modernization and Replacement Applications, Follow the Instructions Below.

⚠ CAUTION

Installer must be a trained, experienced, flame safeguard control service technician.
Disconnect power supply before beginning installation to prevent electrical shock and equipment damage. More than one disconnect may be involved.
All wiring must comply with applicable local electrical codes, ordinances, and regulations.
Voltage and frequency of the power supply and flame detector(s) connected to this control must agree with those marked on the device.
Loads connected to the control terminals must not exceed those listed in specification sheet for this product.
All external timers must be listed or component recognized by authorities having jurisdiction, for the specific purpose for which they are used.
Perform all required checkout tests after installation is complete.

RA890 and Fireye “M” Series Modernization



Modernize Honeywell RA890E,F,G and Fireye “M” Series relays.

- Use R4795 Primary Controls to provide proven prepurge period and recycle on flame failure.
- 9.8A burner motor contact rating for longer life; solid state circuitry for greater dependability.
- Mount on same Q270A Subbase as RA890, use same flame detector.
- Increase flexibility and reduce maintenance costs with field-replaceable, plug-in purge timers and flame signal amplifiers.
- Flame signal strength (μ A) labeled on amplifier to reduce service time.
- All controls are listed by Underwriters Laboratories Inc.
- Three-second flame failure response time for increased safety.
- Plug-in components add versatility and reduce inventory and future replacement costs.

For complete Honeywell and competitive modernization information, refer to the Flame Safeguard System Modernization Survey and Proposal Form, in THE FIRING LINE, Honeywell form 70-8900. For information about THE FIRING LINE, see Training Materials section.

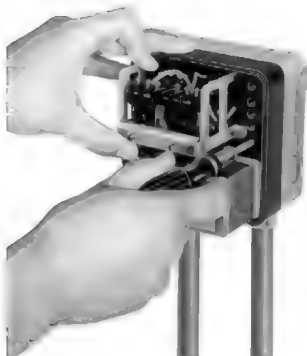
Programmer/Relay to be Replaced/Modernized	Replacement Programmer	Plug-in Amplifier	Detector	Plug-in ^a Timer (recommended)
RA890E,F	Use R4795A1016 for UL approved installations.	R7289A1004	Use existing rectification detector.	ST71A1000 (7-sec delay for oil)
RA890G		R7290A1001	Use existing U.V. detector.	ST71A1018 (30-sec purge)
Fireye TFM Series ^b		R7289A1004	Use existing rectification detector.	ST71A1026 (60-sec purge)
Fireye UVM Series ^b		R7290A1001	Replace Fireye detector with C7027A1080 U.V. detector.	ST71A1034 (90-sec purge) ST71A1042 (10-sec purge)

^a Many codes require 4 air changes during purge. Choose the timing needed to accomplish this (typically 30 seconds at high fire—open damper—or 90 seconds at low fire).

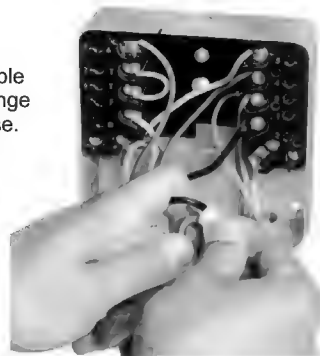
^b When replacing Fireye M-series programmers, a Q270A1024 subbase must be installed in place of the Fireye subbase.

INSTALLING AN R4795

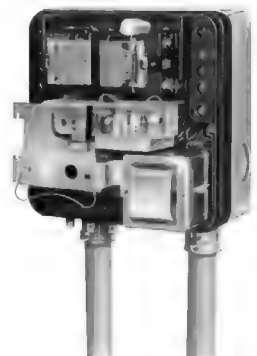
1
Disconnect power supply and remove RA890.



2
Make simple wiring change in subbase.

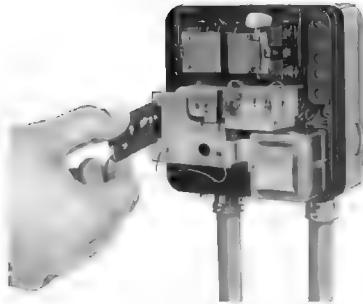


3
Install R4795.

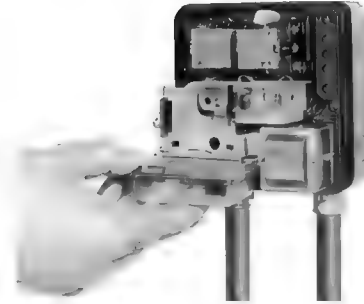


Modernization and Replacement

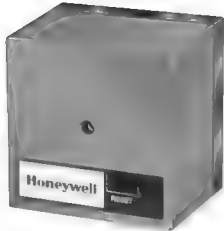
4
Plug in
ST71A
purge timer.



5
Plug in
R7289/R7290
amplifier



R7795 Primary Control



Provide flameout protection plus automatic control of commercial and industrial gas and oil burners.

- Meet requirements for gas burners with 400,000 to 2-1/2 million Btuh (117.2 to 732.8 kW) input. R7795C,D meet requirements to over 12-1/2 million Btuh.
- R7795A,B provide ignition cutoff and intermittent pilot.
- R7795C,D have interrupted pilot with delayed main valve.
- Includes terminals for connection of a line voltage airflow switch to prove airflow from the start of prepurge through the run period.
- Mount on Q795A Subbase with two captive screws.
- Provides all electrical connections between the device and subbase.
- Access to wiring terminals for testing.
- Integral solid state color-coded flame amplifiers.
- Field-selectable ten or four second trial for pilot flame ignition.
- Field-selectable recycle or lockout on flame failure.

Conversion Wiring Chart for R7795A-D

You can easily convert the following model primaries and programmers to the R7795A,B,C or D by following the step-by-step instructions listed below.

Honeywell	RA890, R4795	All 120 V models.
Fireye	M-Series	

IMPORTANT: For on-off, gas-fired systems, some authorities having jurisdiction prohibit the wiring of any limit or operating contacts in series with the main fuel valve(s).

DIRECTIONS:

1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).
3. Mark all wires on subbase; i.e., wires connected to terminal "1" should be marked "1." Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q795A Subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: to convert a Fireye UVM-2 to a R7795, the wire marked "A" would connect to terminal #9 on the Q795. The wire marked "8" would connect to Q795 terminal #8.
7. A superscript letter, such as "a" designates a footnote. Study these footnotes carefully.
8. Plug in the R7795. Make sure you select the proper ST795A Purge Timer and Detector for the application.
9. There are 2 wires on the amplifier section of the R7795, which are used to select the desired trial for ignition timing and mode (lock-out or recycle). Refer to the R7795 instruction sheet (form 66-2001) for assistance with proper selection.
10. If a low voltage controller is used on the RA890 or UVM-1, remove it and replace it with a line voltage controller. The line voltage controller should be connected in series with the limits.
11. If a low voltage airflow switch is used on the R7795, it must be replaced with a line voltage airflow switch, such as the Honeywell C645.
12. The following models are recommended for replacements:

Honeywell Device to be Replaced	Replace With	Fireye Device to be Replaced	Replace With
RA890E,F	R7795B	TFM1,2,3H	R7795B
RA890G	R7795A	UVM1,2,3,3H	R7795A
R4795A,D/W-R7290 AMP		UVM5	R7795C
R4795A,D/W-R7289 AMP	R7795B		
R4140P	R7795C,D		
R4140Y	R7795A,B		

CONVERSION CHART FOR R7795 120 VOLT ONLY

Q795 TERMINAL	L1	L2	3	5	6	7	8	9	16	18	F	G
Programmer to be Converted												
RA890 (All)	1 ^a	2	b	3 ^d	5	—	d,b	c	6	4	F	G
R4795 (All)	a	2	6 ^b	3	5	—	8, 7	c	1	4	F	G
R4140P	L1	L2	P	5	7	6	M	A	3	—	S1	S2
R4140Y	L1	L2	3	6	7	—	8	9	4	5	F ^e	G
Fireye: UVM/TFM (All models)/MII	1	1	6	3	5	—	8	A	7	4	S2 ^f	S1
UVM-1 (Prior to 1968)	a	2	b	3	5	—	d,b	A	1	4	S ^f	S
UVM-2 (Prior to 1968), All others	a	2	6	3	5	—	8	A	1	4	S ^f	S

^a Connect power to terminal L1.

^b If no airflow switch is used, jumper Q795 terminal 3 to 8.

^c Replace low voltage alarm (if used) with line voltage alarm. Connect alarm directly to Q795 terminal 9.

^d On power burners, identify burner motor wire on terminal 3 and connect it to Q795 terminal 8.

^e R7795 uses only rectification or U.V. detectors. All other detectors must be converted to these types.

^f On UVM models, the detector must be changed to a Honeywell C7027 or C7035.

RM7895 On-Off Primary Control with Prepurge



Microprocessor-based integrated primary burner control for automatically fired gas, oil, or combination fuel single burner applications. Provides level of safety, functional capability and features beyond conventional controls.

- Functions include automatic burner sequencing, flame supervision, system status indication, system or self-diagnostics and troubleshooting.
- Subbase, amplifier, and prepurge timer are required for operation.
- Options include PC interface, keyboard display module, Data ControlBus™ Module, remote display module, first-out expanded annunciator, and Combustion System Manager™ software.
- Five LEDs provide sequence information.
- Interchangeable plug-in flame amplifiers.
- Optional local or remote annunciation of operation and fault information.
- Nonvolatile memory retains history files and sequencing status after power loss.
- Optional remote reset capability.
- Optional report generation.
- Selectable relight or lockout on loss of flame.
- Airflow switch check.

Honeywell	RA890, R4795, R7795	All 120 V models.
Fireye	M-Series	

IMPORTANT: For on-off, gas-fired systems, some authorities having jurisdiction prohibit the wiring of any limit or operating contacts in series with the main fuel valve(s).

DIRECTIONS:

1. Disconnect all power to programmer.
2. Remove old programmer from subbase (trade-in to Honeywell Authorized Flame Safeguard Distributor).

CONVERSION CHART FOR RM7895 120 VOLT ONLY

Q7800 TERMINAL	L1	L2	3	4	6	7	8	9	10	21	F	G
Programmer to be Converted												
RA890 (All)	1 ^a	2	c	b,d	6	b	3 ^d	5	4	—	F	G
R4795 (All)	a	2	c	8, 7	1	6 ^b	3	5	4	—	F	G
R7795A,B	L1	L2	9	8	16	3	5	6	18	—	F	G
R7795C,D	L1	L2	9	8	16	3	5	6	18	7	F	G
R4140P	L1	L2	A	M	3	P	5	7	—	6	S1	S2
R4140Y	L1	L2	9	8	4	3	6	7	5	—	F ^e	G
Fireye: UVM/TFM (All models)/MII	1	1	A	8	7	6	3	5	4	—	S2 ^f	S1
UVM-1 (Prior to 1968)	a	2	A	b,d	1	b	3	5	4	—	S ^f	S
UVM-2 (Prior to 1968), All others	a	2	A	8	1	6	3	5	4	—	S ^f	S

^a Connect power to terminal L1.

^b If no airflow switch is used, jumper Q7800 terminal 6 to 7.

^c Replace low voltage alarm (if used) with line voltage alarm. Connect alarm directly to Q7800 terminal 3.

^d On power burners, identify burner motor wire on terminal 3 and connect it to Q7800 terminal 4.

^e Select amplifier to match detector being used.

^f On UVM models, the detector must be changed to a Honeywell C7027 or C7035.

3. Mark all wires on subbase; i.e., wires connected to terminal "1" should be marked "1." Disconnect wires as they are marked.
4. Remove old subbase.
5. Mount Q7800A Subbase.
6. Connect wires to subbase per attached cross reference. Pay close attention to footnotes. For example: to convert a Fireye UVM-2 to a RM7895, the wire marked "A" would connect to terminal #9 on the Q7800. The wire marked "8" would connect to Q7800 terminal #8.
7. A superscript letter, such as "a" designates a footnote. Study these footnotes carefully.
8. Plug in the RM7895. Make sure you select the proper ST7800A Purge Timer and Detector for the application.
9. There are 2 wires on the amplifier section of the RM7895, which are used to select the desired trial for ignition timing and mode (lock-out or recycle). Refer to the RM7895 instruction sheet (form 66-1090) for assistance with proper selection.
10. If a low voltage controller is used on the RA890 or UVM-1, remove it and replace it with a line voltage controller. The line voltage controller should be connected in series with the limits.
11. If a low voltage airflow switch is used on the RM7895, it must be replaced with a line voltage airflow switch, such as the Honeywell C645.
12. The following models are recommended for replacements:

Honeywell Device to be Replaced	Replace With	Amplifier
RA890E,F	RM7895A	R7847A
RA890G	RM7895A	R7849A
R4795A,D/W-R7290 AMP	RM7895A	
R4795A,D/W-R7289 AMP	RM7895B	R7847A
R7795A	RM7895A	
R7795B	RM7895A	
R7795C	RM7895C	
R7796D	RM7895C	
R4140P	RM7895C	R7847A, R7849A
R4140Y	RM7895A	
Fireye Device to be Replaced	Replace With	Amplifier
TFM1,2,3H	RM7895A	R7847A
UVM1,2,3,3H		R7849A
UVM5	RM7895C	R7849A

Control System

BC7000 'Blue Chip' Microcomputer Burner Control System

Intelligent microcomputer-based integrated control system for automatically fired commercial and industrial single burner applications. Requires a PM720G, L or M Program Module.



Dimensions, Approximate: 6 19/32 in. high, 7 11/16 in. wide, 5 1/8 in. deep (168 mm high, 196 mm wide, 130 mm deep)

Voltage: 120 Vac

Frequency: 50/60 Hz

Approvals:

Factory Mutual: Approved: Report No. J.I.1F6A1.AF (used with PM720L)

Required Components: PM720G, L, or M Program Module, Q520A Subbase, R7247, R7248, or R7249 Flame Signal Amplifier

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

123514B Flame Simulator, Simulates C7027, C7035, C7044

199037B Terminal Board Assembly

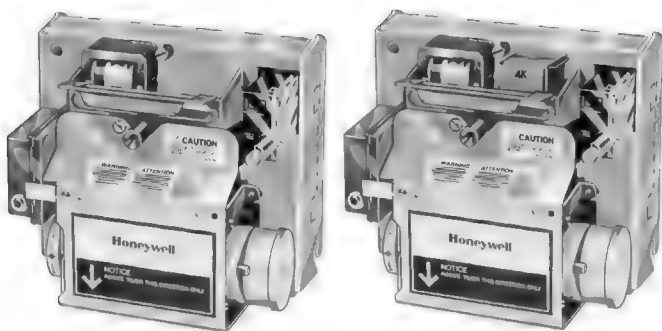
Q520A1089 Programmer Subbase

Q520A1121 Programmer Subbase

Q520E1002 Programmer Service Tool

Product Number	Ambient Temperature Rating		Comments
	(F)	(C)	
BC7000L1000	32 F to 130 F	0 C to 54 C	Timing and interlocks determined by PM720 G, L, M Program Modules

R4140 Automatic Programming Control



Provide flameout protection and automatic sequencing for commercial and industrial single or dual fuel burners.

- Directly replace R4150 for most applications; mount on same Q520A Subbase as R4150.
- Provide safety shutdown on flame failure (lockout).
- Safe-start check.
- Include sequence burner motor, ignition, pilot valve and main fuel valves.

Dimensions, Approximate: 6 5/32 in. high, 7 3/16 in. wide, 5 5/8 in. deep (156 mm high, 183 mm wide, 143 mm deep)

AirFlow Check: User selectable

Humidity Range: 85% RH continuous, non-condensing

Voltage: 120 Vac

Frequency: 60 Hz

Vibration: 0.5 G environment

Weight (lb): 4 lb. 12 oz (2.15 kg)

Approvals:

Canadian Standards Association: Certified: File No. LR1620, Guide No. A-Z

Factory Mutual: Approved: Report No. 24180

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Component Recognized: File No. MP269, Guide No. MCCZ2, MCCZ

Required Components: Q520A Subbase, R7247, R7248, or R7249 Flame Signal Amplifier

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

Q520A1089 Programmer Subbase

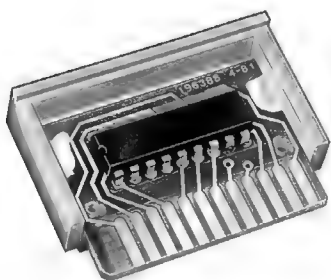
Q520A1121 Programmer Subbase

Q520E1002 Programmer Service Tool

Product Number	Early Spark Termination	Flame Establishing Period		Interlocks	Pilot Type	Pre-Purge	Pre-ignition	Post-Purge	Ambient Temperature Rating		Comments
		Main	Pilot						(F)	(C)	
R4140G1064	Yes, 5 sec	10 sec	10 sec	Start, Running and Low Fire	intermittent	60 sec.	No	15 sec	-40 F to 150 F	-40 C to 66 C	Less Cover
R4140G1171	Yes, 5 sec	60 sec, 30 sec, 10 sec	10 sec	Start, Running and Low Fire	interrupted	70 sec.	No	25 sec	-40 F to 150 F	-40 C to 66 C	Less Cover
R4140G1189	Yes, 5 sec	4 sec, 10 sec	10 sec	Pre-ignition, Running, and Low Fire	interrupted	60 sec.	Yes	15 sec	-40 F to 150 F	-40 C to 66 C	Less Cover (GP201)
R4140L1089	Yes, 5 sec	4 sec, 10 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	60 sec.	Yes	15 sec	-40 F to 130 F	-40 C to 54 C	Less Cover (GP301)
R4140L1147	Yes, 5 sec	15 sec, 30 sec, 10 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	60 sec.	Yes	15 sec	-40 F to 130 F	-40 C to 54 C	Less Cover
R4140M1038	Yes, 5 sec	10 sec	10 sec	Start and Running	intermittent	42 sec.	—	15 sec	-40 F to 150 F	-40 C to 66 C	Less Cover
R4140M1053	Yes, 5 sec	10 sec	10 sec	Start and Running	intermittent	90 sec.	—	25 sec	-40 F to 150 F	-40 C to 66 C	Less Cover
R4140M1079	—	10 sec	10 sec	Start and Running	intermittent	90 sec.	—	25 sec	-40 F to 150 F	-40 C to 66 C	Less Cover

Programming Modules

PM720 Programming Module



Provides Sequencing Control for the BC7000.

- Plug-in program module for use with the BC7000L Microcomputer Burner Control.
- Determines Burner Sequence timings and features.
- Safe-start check.

AirFlow Check: User selectable

Frequency: 60 Hz

Approvals:

Canadian Standards Association: —

Factory Mutual: Reference BC7000

Required Components: Works with BC7000

Product Number	Early Spark Termination	Flame Establishing Period		Interlocks	Pilot Type	Pre-Purge	Pre-ignition	Post-Purge	Comments
		Main	Pilot						
PM720G2005	Yes, 5 sec	30 sec, 10 sec	10 sec	Pre-ignition, Running, and Low Fire	interrupted	40 sec.	Yes	15 sec	—
PM720G2013	Yes, 5 sec	10 sec	10 sec	Pre-ignition, Running, and Low Fire	interrupted	40 sec.	Yes	15 sec	—
PM720L1030	Yes, 5 sec	15 sec, 10 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	30 sec.	Yes	15 sec	—
PM720L2004	Yes, 5 sec	10 sec, 5 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	30 sec.	Yes	15 sec	Energy Saving Sequence
PM720L2012	Yes, 5 sec	15 sec, 10 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	30 sec.	Yes	15 sec	—
PM720L2020	Yes, 5 sec	15 sec, 10 sec	10 sec	Pre-ignition, Lockout, Low Fire and High Fire	interrupted	10 sec.	Yes	15 sec	—
PM720M2002	Yes, 5 sec	10 sec	10 sec	Pre-ignition, Running, and Low Fire	interrupted	30 sec, 90 sec	Yes	15 sec	—
PM720M2036	Yes, 5 sec	10 sec	10 sec	Pre-ignition and Running	interrupted	30 sec., 7 sec	Yes	15 sec	—

Programmer Control Accessories

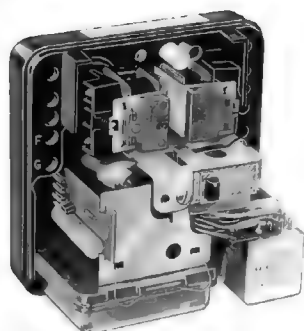
OS Number	Description
124731D	Terminal Strip, center
129410	Motor, Synchronized
197446	Fault Code Label
199037B	Terminal Board Assembly
202050C	Cover with Reset Button
4074BZU	Bag Assembly incl. Adaptor, Cover Inset, 2 Plugs and #8-32 Screw

Q520 Subbase and Service Tool

Dimensions, Approximate: 6 5/32 in. high, 7 1/16 in. wide, 1 3/4 in. deep (156 mm high, 179 mm wide, 45 mm deep)

Product Number	Comments
Q520A1089	Includes 20 terminals
Q520A1121	Includes 20 terminals
Q520E1002	For burner system testing of most R4140 and BC7000. External terminal box connected to Q520E by 3 ft (0.9 m) cable with pin jacks corresponding to terminals on programmer.

R4795 Primary Controls



Provide solid state, electronic flame safeguard protection for commercial and industrial single or dual fuel burners.

- Use with rectification or ultraviolet type flame detectors depending on the interchangeable, plug-in amplifier being used.
- Recycle once after flame failure in attempt to re-establish pilot before lockout.
- Include manual push-to-reset safety switch in a dust-resistant enclosure.
- Includes spdt alarm contacts.

Dimensions, Approximate: 5 in. high, 5 in. wide, 4 3/4 in. deep, (127 mm high, 127 mm wide, 121 mm deep)

Alarm Relay Switching: SPDT

Safety Switch Timing: 15 sec nominal

Connections: Alarm contacts: male quick-connect terminals.

Purging Time: Determined by Plug -in Purge Timer

Temperature Ratings: -20 F to +105 F @ 50 Hz,
-20 F to +115 F @ 60 Hz
(-29 C to +40 C @ 50 Hz, -29 C to +46 C @ 60 Hz)

Approvals:

Canadian Standards Association: CSA Certified: 120V models only, includes -40 F models-File No. LR1620

Factory Mutual: Approved: Report No. 18774

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: UL Listed:120V w/ 30, 60, 90 sec prepurge timers, includes -40 F models-File No.MP268, Guide No. MCCZ; UL Comp. Recg.:120V w/ 7, 10 sec prepurge timers, includes -40 F models-File No.MP268, Guide No.MCCZ2

Required Components: Mounting Base: Q270A1024;
Plug-in Amplifier: R7289A1004, R7289A1012, R7290A1001, R7290A1019;
Plug-in Purge Timer: ST71A1000 (7 sec), ST71A1042 (10 sec), ST71A1018 (30 sec), ST71A1026 (60 sec), ST71A1034 (90 sec).

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

123514B Flame Simulator, Simulates C7027, C7035, C7044

Product Number	Electrical Ratings		Description	Includes
	Power Supply (Vac)	Frequency (Hz)		
R4795A1016	120 Vac	50/60 Hz	120V 50/60 Hz less Amplifier and Prepurge Timer	female quick-connects
R4795A1040	220 Vac	50/60 Hz	220V 50/60 Hz less Amplifier and Prepurge Timer	female quick-connects

R7795 Primary Controls



Provide solid state, electronic flame safeguard protection for commercial and industrial single or dual fuel burners.

- Include flame signal amplifiers that are color-coded: purple for ultraviolet and green for rectification.
- Require a plug-in prepurge timer of 1.5, 7, 10, 30, 60, or 90 seconds.
- mount on a Q795A Wiring subbase with two captive screws.
- Include line voltage airflow switch to prove airflow from the start of prepurge through the run period.
- Prevent start-up with lockout if flame or a flame simulating failure exists.

- Require manual reset after safety switch lockout.
- Field-selectable recycle or lockout on flame failure.

Dimensions, Approximate: 5 in. high, 5 in wide, 5 1/4 in. deep. (127 mm high, 127 mm wide, 133.5 mm deep)

Application: Provides Flameout Protection plus Automatic control of Commercial and Industrial Gas and Oil Burners

Alarm Relay Switching: 120Vac Output for Alarm

Safety Switch Timing: Electronic - 10 seconds, Mechanical - 15 seconds

Connections: Terminals in Q795 Wiring Subbase

Purging Time: Determined by Plug -in Purge Timer

Temperature Ratings: -40 F to +135 F (-40 C to +57 C)

Approvals:

Canadian Standards Association: Certified: File No. LR1620-681

Factory Mutual: Approved: Report No. J.I.OK389.AF

Industrial Risk Insurers: Acceptable

Underwriters Laboratories, Inc: Component Recognized: File No. MP268, Guide No. MCCZ

Required Components: ST795 Prepurge Timer and Q795 Wiring Subbase

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

123514B Flame Simulator, Simulates C7027, C7035, C7044

Product Number	Flame Failure Response Time	Electrical Ratings		Description
		Power Supply (Vac)	Frequency (Hz)	
R7795A1001	3 sec nominal	120 Vac	50/60 Hz	Full Function Primary Safety Control, Intermittent Pilot, Ultraviolet
R7795B1009	3 sec nominal	120 Vac	50/60 Hz	Full Function Primary Safety Control, Intermittent Pilot, Rectification
R7795C1007	3 sec nominal	120 Vac	50/60 Hz	Full Function Primary Safety Control, Interrupted Pilot, Ultraviolet
R7795D1005	3 sec nominal	120 Vac	50/60 Hz	Full Function Primary Safety Control, Interrupted Pilot, Rectification

Controllers

RA890F Protectorelay® Primary Control



Dimensions, Approximate: 5 in. high, 5 in. wide, 4 3/4 in. deep (including subbase) (127 mm high, 127 mm wide, 121 mm deep (including subbase))

Application: Either a line or low voltage controller can be used

Alarm Relay Switching: SPDT

Safety Switch Timing: 15 seconds

Temperature Ratings: 50 Hz models -20 F to +105 F, 60 Hz models -20 F to +115 F
(50 Hz Models -29 C to +41 C, 60 Hz Models -29 C to +46 C)

Primary control provides solid state, electronic flame safeguard protection for industrial and commercial single or dual fuel burners.

- Uses rectification principle of electronic flame detection.
- Replaces RA890E in most applications; Mounts on same Q270A1024 Subbase.
- Recycles if flame signal lost while in Run. Failure to establish pilot results in a lockout. Safe-start check prevents start-up if flame-simulating failure occurs in flame detector circuit.
- Includes built-in protection against ignition crossover in flame rod systems.
- Includes spdt alarm contacts.
- Solid state circuitry.
- Mounts and removes easily through use of captive mounting screws.
- Mounting base is made of strong thermoplastic.

Approvals:

Canadian Standards Association: CSA Certified: 120V models only; File No. LR1620

Factory Mutual: Approved: Report No. 17678,19417,19784

Underwriters Laboratories, Inc: UL Listed: 120V models only; File No. MP268, Guide No. MCCZ

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

Product Number	Flame Failure Response Time	Electrical Ratings		Description
		Power Supply (Vac)	Frequency (Hz)	
RA890F1270	0.8 sec	120 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1288	3.0 sec	120 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1296	3.0 sec	208 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1304	0.8 sec	220 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1338	0.8 sec	120 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1346	3.0 sec	120 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1387	3.0 sec	240 Vac	50/60 Hz	Rectification, with alarm contacts
RA890F1478	0.8 sec	120 Vac	50/60 Hz	Rectification, with alarm contacts, fast safe start check

RA890G Protectorelay® Primary Control



Dimensions, Approximate: 5 in. high, 5 in. wide, 4 3/4 in. deep (including subbase) (127 mm high, 127 mm wide, 121 mm deep (including subbase))

Application: Either a line or low voltage controller can be used

Alarm Relay Switching: SPDT

Safety Switch Timing: 15 seconds

Temperature Ratings: 50 Hz models -20 F to +105 F, 60 Hz models -20 F to +115 F (50 Hz Models -29 C to +41 C, 60 Hz Models -29 C to +46 C)

Primary control provides solid state, electronic flame safeguard protection for industrial and commercial single or dual fuel burners.

- Designed for interrupted ignition with intermittent pilot on gas burners, and interrupted or intermittent ignition on oil burners.
- Use with a C7027, C7035 or C7044 Minipeeper Ultraviolet Flame Detector for flame sensing.
- Relights once after flame failure in attempt to re-establish pilot before lockout.
- Solid state circuitry, eliminates warm-up and increases resistance to vibration.
- Includes spdt alarm contacts.
- Test jack permits reading of the flame signal.
- Mounts and removes easily through use of captive mounting screws.
- Mounting base is made of strong thermoplastic.

Approvals:

Canadian Standards Association: CSA Certified: 120V models only; File No. LR9S329

Control Safety Devices: Factory Mutual: Approved: Report No. 22013

Underwriters Laboratories, Inc: UL Listed: 120V models only; File No. MP268, Guide No. MCCZ

Accessories:

123514B Flame Simulator, Simulates C7027, C7035, C7044

Q270A1024 Wiring Mounting Base for RA890, R4795

Product Number	Flame Failure Response Time	Electrical Ratings		Description
		Power Supply (Vac)	Frequency (Hz)	
RA890G1229	0.8 sec	120 Vac	50/60 Hz	Ultraviolet, with alarm contacts
RA890G1245	0.8 sec	220 Vac	50/60 Hz	Ultraviolet, with alarm contacts
RA890G1260	3.0 sec	120 Vac	50/60 Hz	Ultraviolet, with alarm contacts
RA890G1286	3.0 sec	240 Vac	50/60 Hz	Ultraviolet, with alarm contacts
RA890G1302	3.0 sec	220 Vac	50 Hz	Ultraviolet, with alarm contacts

Flame Amplifier Module

FSP5075A1; FSP5075A3 Flame Amplifier Modules



Dimensions, Approximate: 4 7/8 in. high, 8 1/2 in. wide, 4 in. deep.
(124 mm high, 216 mm wide, 102 mm deep)

Temperature Ratings: -40 F to +140 F (-40 C to +60 C)

Approvals:

Control Safety Devices: Factory Mutual: Approved: Report No. 26098

Industrial Risk Insurers: Acceptable

Use electronic flame detection to provide continuous flame supervision from lightoff to shutdown.

- Solid state, color-coded, flame signal amplifier plugs into FSP5075A1 or FSP5075A3. (Order plug-in amplifiers separately.)
- Offer safe start check for a flame when starting burner.
- Include safety shutdown feature for loss of flame during run period or failure in flame detection system when a self-checking system is used.
- Removable cover allows easy access to amplifier, relays and terminal strip.
- Provide hermetically sealed relays for use in hostile environments.

Underwriters Laboratories, Inc: Component Recognized: File No. MP268, Guide No. MCCZ

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

123514B Flame Simulator, Simulates C7027, C7035, C7044

Product Number	Flame Failure Response Time	Electrical Ratings			Product Used With	Description	Comments
		Power Supply (Vac)	Frequency (Hz)	Power Consumption			
FSP5075A1	Reference flame signal amplifier	120 Vac	60 Hz	5.0 W running (max); 2.4 W standby.	R7247, R7248, R7249, or R7476 Flame Amplifier	Flame Amplifier Module	Relays Plastic Encapsulated
FSP5075A3	Reference flame signal amplifier	120 Vac	60 Hz	5.0 W running (max); 2.4 W standby.	R7247, R7248, R7249, or R7476 Flame Amplifier	Flame Amplifier Module	Relays Hermetically Sealed

ST71 Prepurge Timer

Application: Prepurge Timer for R4795 Control Systems

Temperature Ratings: (-20 F to +115 F @ 50 Hz,
-20 F to +125 F @ 60 Hz
(-20 C to +46 C @ 50 Hz, -20 C to +52 C @ 60 Hz)

Product Number	Purging Time	Description
ST71A1000	7 sec	Prepurge Timer for R4795 Control Systems
ST71A1018	30 sec	Prepurge Timer for R4795 Control Systems
ST71A1026	60 sec	Prepurge Timer for R4795 Control Systems
ST71A1034	90 sec	Prepurge Timer for R4795 Control Systems
ST71A1042	10 sec	Prepurge Timer for R4795 Control Systems

ST795 Purge Timer

Application: Plug in Purge Timer for use with R7795 Full Function Primary Safety Control

Temperature Ratings: (-40 F to +135 F @ 60 Hz
-40 to +120 F @ 50 Hz)
(-40 C to +57 C @ 60 Hz, -40 C to +67 C @ 50 Hz)

Product Number	Purging Time	Description
ST795A1007	1.5 sec	Prepurge Timer for R7795 Control Systems
ST795A1015	7 sec	Prepurge Timer for R7795 Control Systems
ST795A1023	10 sec	Prepurge Timer for R7795 Control Systems
ST795A1031	30 sec	Prepurge Timer for R7795 Control Systems
ST795A1049	60 sec	Prepurge Timer for R7795 Control Systems
ST795A1056	90 sec	Prepurge Timer for R7795 Control Systems

Primary Control Accessories

Product Number	Description	Used With
106807	Neon Bulb for Q518, Q519	Q518, Q519
118702E	Remote Reset Cover for RA890F, G and R4795, 120V/50-60 Hz	RA890, R4795
122765	Neon Bulb for remote First out for W688, Q518, Q519	Q518, Q519
125133A	Connecting Cable 6' for remote "first out" indicating light, Q518, Q519	Q518, Q519
125435	Lamp socket for Remote First Out for W688, Q518, Q519	Q518, Q519
198365B	Remote Reset Cover for Series 2 R7795A-D, (120V/60)	R7795A, R7795B, R7795C, R7795D
202980	Flame Relay for FSP5075A1	FSP5075A1

Q270 Wiring Mount Base

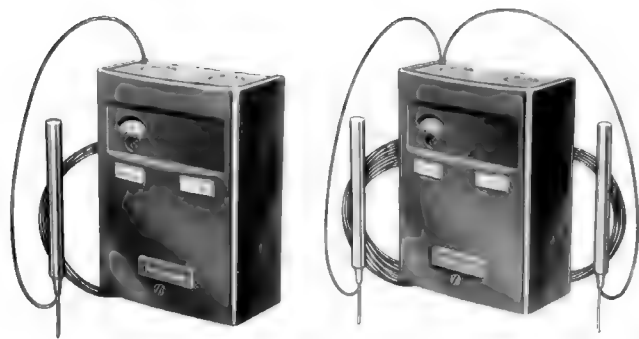
Product Number	Product Used With	Description
Q270A1024	RA890, R4795	Wiring Mounting Base for RA890, R4795

Q795 Wiring Subbases

Product Number	Product Used With	Description
Q795A1004	R7795	4-side conduit box subbase with terminals intended to accept field wiring. For use with R7795 full function primary safety control.
Q795A1012	R7795	Subbase for wiring and mounting the R7795 in a Cabinet

Modulating Reset Temperature Controller

T991E,F Proportional Temperature Controller



Provide both on-off and modulating control of water or air temperatures in ducts, tanks and similar applications.

- Micro Switch™ end switch cycles burner on and off at low fire; T991 then modulates burner as required.
- Designed for use with V9055; can be used with any series 90 motor.
- Ambient compensated.
- Set point adjustment on front of case.
- Switch makes 1 F (0.6 C) above end of throttling range.
- Mount using three holes in the back of the case.

Application: Provides on/off and modulating control of water or air temperature in ducts or tanks

Type: Remote bulb

Color: Gray

Number of Sensors: 1

Analog Output: One 135 Ohm Potentiometer

Output: 1 spst

Sensor Element: Copper bulb

Throttling Range: 11 F (6 C)

Frequency: 50 Hz, 60 Hz

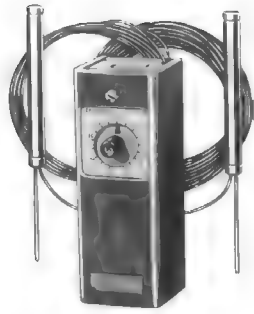
Replacement Parts:

See table on page 801

Product Number	Bulb Size		Capillary Length		Maximum Operating Temperature		Differential Temperature		Setpoint Temperature Range		Comments
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)	(F)	(C)	
T991E1018	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	280 F	138 C	4 F additive	2.2 C additive	160 F to 260 F	71 C to 127 C	—
T991E1034	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	5 ft	1.5 m	200 F	93 C	4 F additive	2.2 C additive	55 F to 175 F	13 C to 79 C	—
T991F1009	1/2 in. diameter, 4 3/16 in. long	13 mm diameter, 107 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	265 F	129 C	4 F additive	2.2 C additive	70 F to 140 F	21 C to 60 C	Indoor bulb temperature plus outdoor bulb temperature must not exceed 265 F (129 C).

Modulating Reset Temperature Controller

T678B; T991B Outdoor Reset Dual Bulb Temperature Controller



Automatic outdoor reset controllers for air or liquid.

- Raises heating medium control point automatically as outdoor temperature falls.
- One remote element senses heating medium, the other senses outdoor air temperature.
- T991 has 135 ohm potentiometer for proportional heating control.

Application: Automatic reset based on outdoor temperature

Analog Output: T991B (only): One 135 Ohm Potentiometer

Type: Remote bulb

Reset Ratio: 1.0 to 1.0

Number of Sensors: 2

Voltage: 120 Vac

Frequency: 50 Hz, 60 Hz

Maximum Operating Temperature: 125 F (52 C)

Sensor Element: Copper bulb

Approvals:

Canadian Standards Association: Listed

Underwriters Laboratories, Inc: UL Listed: E4436, Vol. 4, Sec. 11, Guide XAPX

Contact Ratings:

	120 Vac	240 Vac
T678B	8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR
T991B	—	—

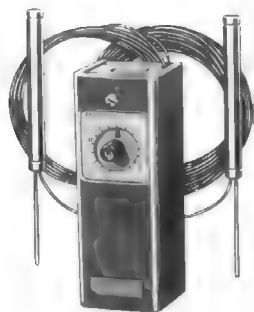
Replacement Parts:

See table on page 801

Product Number	Bulb Size		Capillary Length		Differential Temperature		Setpoint Temperature Range		Output	Comments
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)		
T678B1006	1/2 in. x 4 in.	13 mm dia., 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	Switch: 6 F fixed Interstage: 3 F to 10 F adjustable	Interstage: 1.7 C to 5.5 C adjustable Switch: 3.3 C fixed	70 F to 140 F	21 C to 60 C	2 SPDT switch contacts	Indoor bulb temperature plus outdoor bulb temperature must not exceed 265 F (129 C).
T678B1014	1/2 in. x 4 in.	13 mm dia., 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	Switch: 6 F fixed Interstage: 3 F to 10 F adjustable	Interstage: 1.7 C to 5.5 C adjustable Switch: 3.3 C fixed	70 F to 140 F	21 C to 60 C	2 SPDT switch contacts	Indoor bulb temperature plus 1.5 times outdoor bulb temperature must not exceed 312 F (156 C).
T678B1022	1/2 in. x 4 in.	13 mm dia., 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	Switch: 6 F fixed Interstage: 3 F to 10 F adjustable	Interstage: 1.7 C to 5.5 C adjustable Switch: 3.3 C fixed	70 F to 140 F	21 C to 60 C	2 SPDT switch contacts	Indoor bulb temperature plus 0.67 times outdoor bulb temperature must not exceed 312 F (156 C).
T678B1030	1/2 in. x 4 in.	13 mm dia., 102 mm long	Indoor: 18 ft., Outdoor: 20 ft.	Indoor: 5.5 m, Outdoor: 6.1 m	Switch: 6 F fixed Interstage: 3 F to 10 F adjustable	Interstage: 1.7 C to 5.5 C adjustable Switch: 3.3 C fixed	70 F to 140 F	21 C to 60 C	2 SPDT switch contacts	Indoor bulb temperature plus outdoor bulb temperature must not exceed 265 F (129 C).
T991B1003	1/2 in. diameter, 4 in. long	13 mm dia., 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	—	—	70 F to 140 F	21 C to 60 C	—	Indoor bulb temperature plus outdoor bulb temperature must not exceed 265 F (129 C).
T991B1011	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	—	—	70 F to 140 F	21 C to 60 C	—	Indoor bulb temperature plus 1.5 times outdoor bulb temperature must not exceed 312 F (156 C).
T991B1029	1/2 in. diameter, 4 in. long	13 mm diameter, 102 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	—	—	70 F to 140 F	21 C to 60 C	—	Indoor bulb temperature plus 2/3 times outdoor bulb temperature must not exceed 242 F (117 C).
T991B1037	1/8 in. diameter, 12 ft. long	3 mm diameter, 3 m long	Indoor: 6 ft., Outdoor: 20 ft.	Indoor: 1.8 m, Outdoor: 6.1 m	—	—	70 F to 140 F	21 C to 60 C	—	Indoor bulb temperature plus outdoor bulb temperature must not exceed 265 F (129 C).
T991B1060	1/8 in. diameter, 12 ft. long	3 mm diameter, 3 m long	Indoor: 20 ft., Outdoor: 30 ft.	Indoor: 6.1 m, Outdoor: 9.1 m	—	—	50 F to 120 F	10 C to 49 C	—	Indoor bulb temperature plus 0.29 times outdoor bulb temperature must not exceed 206 F (97 C).

Modulating Reset Temperature Controller

T475 Outdoor Reset Controller



Operating controller for a hot water or warm air heating system.

- Used for line voltage, low voltage or millivolt (Powerpile) switching.
- Maintains proper balance between heating medium temperature and outdoor temperature.
- Raises heating medium control point automatically as outdoor temperature falls.
- Does not replace safety high limit control and is not for use in system requiring resetting above 71 F (21 C) outdoor temperature.

Application: Automatically raises heating control setpoint as outdoor temperature falls

Type: Remote bulb

Color: Gray

Number of Sensors: 2

Voltage: 120 Vac

Frequency: 50 Hz, 60 Hz

Sensor Element: Indoor and outdoor copper bulb

Output: 1 SPST

Approvals:

Underwriters Laboratories, Inc: Listed: E4436, vol. 4, Guide XAPX

Contact Ratings:

120 Vac	240 Vac
8.0 AFL, 48.0 ALR	5.1 AFL, 30.6 ALR

Replacement Parts:

See table on page 801

Product Number	Bulb Size		Capillary Length		Differential Temperature		Setpoint Temperature Range		Comments	Includes
	(inch)	(mm)	(ft)	(m)	(F)	(C)	(F)	(C)		
T475A1016	indoor: 3/8 in. diameter, 3 9/16 long; outdoor: 3/8 in. diameter, 2 1/2 in. long	indoor: 9.5 mm diameter, 90 mm long; outdoor: 9.5 mm diameter, 64 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	6 F to 20 F	3 C to 11 C	70 F to 140 F	21 C to 60 C	1.5:1 reset ratio	34886A Outdoor Bulb Guard
• T475A1032	indoor: 3/8 in. diameter, 3 9/16 long; outdoor: 3/8 in. diameter, 3 9/16 long	indoor: 9.5 mm diameter, 90 mm long; outdoor: 9.5 mm diameter, 90 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	6 F to 20 F	3 C to 11 C	70 F to 140 F	21 C to 60 C	1:1 reset ratio	34886A Outdoor Bulb Guard, 121371P Immersion Well Assembly
• T475A1057	indoor: 3/8 in. diameter, 3 9/16 long; outdoor: 3/8 in. diameter, 5 5/16 in. long	indoor: 9.5 mm diameter, 90 mm long; outdoor: 9.5 mm diameter, 135 mm long	Indoor: 10 ft., Outdoor: 30 ft.	Indoor: 3 m, Outdoor: 9.1 m	6 F to 20 F	3 C to 11 C	70 F to 140 F	21 C to 60 C	1:1.5 reset ratio	34886A Outdoor Bulb Guard, 121371P Immersion Well Assembly

* TRADELINE models • SUPER TRADELINE models

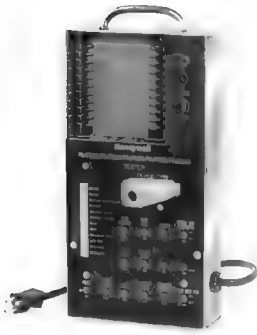
Modulating Reset Temperature Controller

Reset Temperature Controller Accessories and Replacement Parts

Product Number	Description	Used With
107324A	Capillary Holder Assembly for duct insertion, 8 3/8 in. long	T475A
112620AA	Well Assembly., 3 3/4 in. (95 mm) insertion, 3/8 in. (10 mm) diameter, copper	T678B, T991B, E,F
112620BB	Well Assembly., 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, copper	T678B, T991B, E,F
112620CB	Well Assembly., 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, copper	T678B, T991B, E,F
112622AA	Well Assembly., 4 in. (102 mm) insertion, 1/2 in. (13 mm) diameter, copper	T678B, T991B, E,F
112624AA	Well Assembly., 4 3/4 in. (121 mm) insertion, 1/2 in. (13 mm) diameter, stainless steel	T678B, T991B, E,F
112628AA	Well Assembly., 4 3/4 in. (121 mm) insertion, 1/2 in. (13 mm) diameter, stainless steel	T678B, T991B, E,F
112630AA	Well Assembly., 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper	T678B, T991B, E,F
112634AA	Well Assembly., 4 1/4 in. (108 mm) insertion, 1/2 in. (13 mm) diameter, copper	T678B, T991B, E,F
114509AA	Well Assembly., 5 1/2 in. (140 mm) insertion, 3/8 in. (10 mm) diameter, stainless steel	T678B, T991B, E,F
121371A	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size:3 in. (76 mm) insertion, 1 1/2 in. NPT. Includes mounting clamp.	T678B, T991B, E,F
121371B	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size:3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.	T678B, T991B, E,F
121371E	Stainless steel. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size:3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. (13 mm) NPT. Includes mounting clamp.	T678B, T991B, E,F
121371L	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size:3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT. Includes mounting clamp.	T678B, T991B, E,F
121371M	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size:3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes mounting clamp.	T678B, T991B, E,F
123869A	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 1/2 in. NPT.	T678B, T991B, E,F
123870A	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT.	T678B, T991B, E,F
123872A	Copper. Bulb size: 3/8 in. x 3 in. (10 mm x 76 mm). Well size: 3 in. (76 mm) insertion, 3 in. (76 mm) insulation, 1/2 in. NPT	T678B, T991B, E,F
124299AA	Copper. Bulb size: 3/8 in. (10 mm). Well size: 3 in. (76 mm) insertion, 1 1/2 in. (38 mm) insulation, 3/4 in. NPT. Includes set screw with spud for armored capillary with plug.	T678B, T991B, E,F
311266D	Bulb Holder Assembly., T4031, use with copper elements only	
7617ABY	Compression Fitting, brass 1/2 in. NPT plug	T678B, T991B, E,F
7617M	Compression Fitting, brass 1/2 in. NPT plug	
7640HX	Mounting Kit, controller and averaging element	T678B, T991B, E,F
Q615A1004	Splash proof enclosure	T475A

Testers and Demonstrators

A7800 Tester



Provides quick operational check of the 7800 SERIES System components.

- Function switches and selectors simulate interlocks and control functions that allow 7800 SERIES devices to operate through sequences.
- Indicator lamps represent outputs as activated.

Accessories:

123514A Flame Simulator, Rectification Type Flame Amplifiers

Product Number	Application	Required Components	Products used with	Comments
A7800A1002	Tester	Configuration Plugs: 203579A; 203579B; 203579C; 203579D; 203579E; 203579F; 203579G	7800 SERIES Relay modules	—
203579A	Tester Configuration Plug	—	RM7800; RM7840	Configures A7800 and DSP2672
203579B	Tester Configuration Plug	—	RM7838A	Configures A7800 and DSP2672
203579C	Tester Configuration Plug	—	RM7838B,C	Configures A7800 and DSP2672
203579D	Tester Configuration Plug	—	RM7885	Configures A7800 and DSP2672
203579E	Tester Configuration Plug	—	RM7890	Configures A7800 and DSP2672
203579F	Tester Configuration Plug	—	RM7895; RM7896	Configures A7800 and DSP2672
203579G	Tester Configuration Plug	—	RM7823	Configures A7800 and DSP2672

7800 SERIES Demonstrator

Voltage: 120 Vac

Frequency (Hz): 50/60 Hz

Product Number	Application	Required Components	Products used with	Comments	Includes
DSP2672	Demonstrator	Configuration Plugs: 203579A; 203579B; 203579C; 203579D; 203579E; 203579F; 203579G	7800 SERIES Relay modules	—	—
DSP3452	Trainer	—	Primaries, Programmers and 7800 SERIES Relay Modules	Complete Flame Safeguard Training Package	4 boards and utility cases
DSP3548	Demonstrator	—	ControlLinks Fuel Air Ratio controls	—	—

FSP1535 Tester



Provides quick operational check of Honeywell RA890 or R4795 nonprogramming primary controls.

- Includes indicator lights that visually represent functions of ignition, pilot and main valve as unit simulates system operation.
- Eliminates need to operate entire system.
- Tests units with rated voltage from 100 to 240, 50/60 Hz by connecting line cord to the rated voltage.

Voltage: 120/240 Vac

Frequency (Hz): 50/60 Hz

Product Number	Application	Products used with
FSP1535	Tester	RA890; R4795

FSP5004 Tester



Provides quick operational check of most Honeywell BC7000, R4140 and R4150 programmers and R7795 primary controls (order 198355A adapter separately).

- Includes indicator lights that visually represent control functions of programmer as unit simulates system operation.
- Works with 120 Vac, 60 Hz controls.
- Use to test some Gordon-Piatt programmers.
- Cannot be used to test some R4140 and R4150 models due to design or wiring differences. Reference the list at right to see if you have one of the controls that CANNOT be tested. If you do, check these out using the instructions provided in their respective instruction manuals.

Voltage: 120 Vac

Frequency (Hz): 50/60 Hz

Product Number	Application	Products used with	Comments
FSP5004	Tester	BC7000; R4140; R7795	DO NOT USE with: BC7000L1018, BC7000L1034, BC7000L1063; R4140D1004, R4140E1001, R4140M1079, or non-120 Vac R4140 models

W136 Meter



Combination ac/dc voltmeter and dc microammeter used to test all flame safeguard controls and associated burner equipment. The W136A can be used to verify flame detector output is sufficient to operate the flame relay.

- Measure ac voltage of 0 to 300 Vac and dc voltages of 0 to 150 Vdc.
- Has 0 to 25 dc microamp scale for accurate checking of flame signal strength.
- Protective circuit prevents meter burnout on 25 uA or SPL settings.
- W136A1045 is in a black leather carrying case that holds meter and has compartment for storing test leads and accessories.
- The W136A1045 includes two push-on alligator clips that fit over probes and 196146 Cable Connector to plug into flame current jack and connect meter in series with flame current lead.
- The W136A1052 requires Cable Connector 196146 to be ordered separately.

Dimensions, Approximate: 8 1/2 in. high, 6 in. wide, 2 1/3 in. deep (216 mm high, 152 mm wide, 59 mm deep)

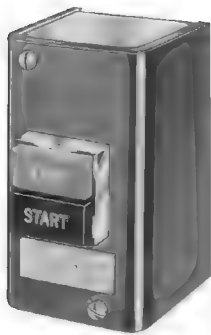
Product Number	Application	Products used with	Comments	Includes
W136A1045	Analog Test Meter	Flame Safeguard Controls	Scale ranges: 0 to 300 Vac; 0 to 150 Vdc; 0 to 25 microamps	Two color coded, 30 in. (762 mm) long pin jack probe. 196146 cable included
W136A1052	Digital Test Meter	Flame Safeguard Controls	Scale ranges: 0 to 300 Vac; 0 to 150 Vdc; 0 to 25 microamps	Two color coded, 30 in. (762 mm) long pin jack probe. Order 196146 cable seperately

Tester and Demonstrator Accessories

Product Number	Application	Products used with	Comments
121708	Flame Simulator, Rectification Flame Amplifiers	R177; R180; R187; RA190A,B; R485A,B; R887; R890; RA890E,F,H,J,K; R7023A,B; R7289A	No test jack, or test jack in F circuit
123514A	Flame Simulator, Rectification Flame Amplifiers	R4075B; R4181A; R4138A,B; R7253A; R8169B; R7257A; R7247A; R7847A	Test jack in G circuit
123514B	Flame Simulator, Ultraviolet Flame Amplifiers	RA890G; R7290A; R7255A; R7259A; R7249A	Simulates Minipeeper Flame Detectors
198355A	Adapter for R7795, used with FSP5004	BC7000; R4140; R7795	
203659	Flame Simulator, Ultraviolet Flame Amplifiers	RA890G; R7795A,C,E,G; R7290; R7255B; R7259A; R7249A r7849a, b	Simulates Minipeeper Flame Detectors

Legacy Replacement Parts

S445A Start-Stop Switch



Pushbutton switch for manually operated oil or gas burner sequencing relays such as RM7885 and RM7838.

- Use with Primary Safety Controls.
- Provides remote start-stop manual control.
- Fully enclosed for minimum maintenance.

Product Number	Description	Dimensions, Approximate		Comments	Used With
		(inch)	(mm)		
S445A1010	Start-Stop Switch	2-1/2 in. wide, 4-3/8 in high, 2-15/16 in. deep.	64 mm wide, 111 mm high, 75 mm deep.	120vac 50/60hz	EC7885A1011, EC7885A1029, RM7838A1014, RM7838B1013, RM7885A1015

Low Water Cut Off Probe Extender

Product Number	Description	Dimensions, Approximate		Used With
		(inch)	(mm)	
193568	Probe Extender for QW700, 6" uninsulated	6 in.	152 mm diameter	QW700
193569	Probe Extender for QW700, 12" uninsulated	12 in.	304 mm long	QW700
193570	Probe Extender for QW700, 18" uninsulated	18 in.	457 mm long	QW700
193571	Probe Extender for QW700, 24" uninsulated	24 in.	609.6 mm long	QW700
193583	Probe Extender for QW700, 36" uninsulated	36 in.	914.4 mm	QW700
195303A	Probe Extender for QW700, 6" insulated	6 in.	152 mm long	QW700
195304A	Probe Extender for QW700, 12" insulated	12 in.	304 mm long	QW700
195305A	Probe Extender for QW700, 18" insulated	18 in.	457 mm long	QW700
195306A	Probe Extender for QW700, 24" insulated	24 in.	609.6 mm long	QW700
195307A	Probe Extender for QW700, 30" insulated	30 in.	762 mm long	QW700
195308A	Probe Extender for QW700, 36" insulated	36 in.	914.4 mm long	QW700

Training Materials

As a major manufacturer in the heating, ventilation and air conditioning industry, Honeywell strives to build high quality products. We are all well aware, however, that the consumer's comfort, safety and satisfaction depend on proper application, installation, service and use of our control devices. Since these vitally important functions depend on the skills of service technicians, we have made a long-term commitment to the technical training of all in the HVAC industry.

As part of our extensive involvement in training, we produce and publish the materials listed in this catalog. By making these materials available to instructors in schools and industry, we hope to share our investment and experience in training with others who have similar educational objectives.



Video is a very effective medium to use for both technical training and product familiarization. Many of the programs described here are relatively short and make a nice addition to a service meeting or formal class on HVAC controls. These tapes have been widely used in a number of applications such as:

- *At the distributor's counter* – to help answer questions and show technicians how to use new products
- *At service meetings* – to review new service procedures at the beginning of a season
- *In the classroom* – to provide students with authoritative information direct from the manufacturer

Burner and Boiler Controls

FSG Controls: The Gas Valve Train

Requirements for controlling gas flow to large burners and the hardware necessary to meet those requirements.

Note: this is a conversion of 35mm slides and sound track to videotape. 25:00

VT29

\$25.00

7800 SERIES

This series of videotapes includes the following:

- **7800 SERIES: The Complete Line of Safety**

This product overview video highlights the features, benefits and accessories of the 7800 SERIES Burner Control. The video acquaints the viewer with a wide range of applications, including traditional boiler room, industrial and rooftop applications. The 7800 SERIES replaces more than 400 Honeywell and non-Honeywell controls, including programmers, primaries, and semi-automatic controls. Accessories highlighted include the Expanded Annunciator, which monitors additional safety limits and control points to minimize troubleshooting and downtime by identifying the source of the problem. 9:45, 1995

- **7800 SERIES: Easy, Basic Installation**

This video demonstrates how easy it is to install 7800 SERIES controls to upgrade equipment with state-of-the-art controls. In addition to covering basic installation procedures and tips, the video also reviews safety precautions and materials and tools needed for the job. 13:10, 1995

- **7800 SERIES: BCS Communications Packages**

Featuring the cost-saving benefits of using communications with Honeywell burner and boiler controls, this video highlights the QS7850 General Purpose Interface, which enables end-users to communicate through their current Honeywell and non-Honeywell industrial and building automation systems. Also demonstrated are features of Honeywell Combustion System Manager Software, a user-friendly Microsoft® Windows software package that supports networking for single-and multi-facility monitoring. 16:15, 1995

VH147
(3-tape package)

\$39.95

Commercial HVAC Controls

In Control With Solid State

This three-part tape covers solid state economizer control systems, and features the H705A Enthalpy Controller, the M7415A Actuator, W7459 Economizer Logic Module, C7400 Air Sensor and C7150 Discharge Air Sensor. Separate parts cover Operation (12:00), Installation (15:00), and Checkout and Troubleshooting (8:00). 35:00

VT34

\$30.00

Gas Heating

Electronic Flame Detection

Safety in residential burner control systems depends on being able to determine rapidly and accurately whether or not the flame is burning. Flame rectification is the system Honeywell uses in all its electronic ignition controls. This tape describes the principle of flame rectification and how it is used in modern burner control systems. It also covers the Honeywell control system where a single flame electrode does the ignition and flame sensing. 6:58, Rev. 1995

VH101

\$40.00

Gas Heating

Intermittent Pilot Gas Burner Control Systems

Electronic controls for intermittent pilot ignition systems provide additional energy savings and a high degree of safety for gas-fired heating equipment. Operation of Honeywell controls, including the Intermittent Pilot Retrofit Kit, are covered in this tape. 13:00, 1995

VH104 \$40.00

Troubleshooting Direct Spark Ignition Controls

Difficulties in direct spark ignition control systems sometimes can be hard to diagnose because the lockout timing is very short. Troubleshooting Honeywell DSI modules is the subject of this tape. 8:55, 1987

VH108 \$40.00

Controls for High Efficiency Gas Heating Equipment

This tape describes the transition from natural draft furnaces to induced draft and higher efficiency furnaces. It describes how natural draft equipment wastes energy and explains how the change to induced draft saves energy. It goes through the controls used on a typical high efficiency furnace, from limits to ignition controls, including the integrated furnace control. 13:05, 1996

VH135 \$40.00

The Honeywell SmartValve™ Gas Ignition System

The new Honeywell SmartValve™ ignition system for gas burning equipment has been widely accepted by manufacturers and is appearing on more and more furnaces, boilers, water heaters and other appliances. To do a good job of troubleshooting this new system, a technician needs two important pieces of knowledge: first, an understanding of how it works and second, familiarity with the troubleshooting procedure. This videotape provides both with emphasis on step-by-step checkout. It shows what checks to make and what results to expect, along with recommendations on what to do when something is not working right. Use this tape in a service meeting, in the classroom or on your own. 24:00, 1999

VH162 \$40.00

Zoning

Honeywell's Networked Zoning Contractor Introduction

A short explanation of the benefits of residential forced air zoning, which leads into an overview of Honeywell's Networked Zoning System. This video briefly demonstrates the basic installation of Networked Zoning, and how the system simplifies wiring. 5:30, 2001

**VH090 \$9.99
Special Price**

Introduction to Networked Zoning for Homeowners

This is a video that will be very useful in helping to explain the operation and benefits of Honeywell's Networked Zoning System to homeowners interested in improving the comfort in their home. 2001

**VH091 \$9.99
Special Price**

Basic Electricity

Electricity and How it Works

Overview of basic electrical concepts in an entertaining cartoon format. Covers: current, voltage, resistance, Ohm's Law, alternating current, transformers, solenoid coils and switches. Note: this is a conversion of 35mm slides and sound track to video tape. 13:00

VT46 \$25.00

Basic Electrical Control Circuits

Starts where "Electricity and How it Works" leaves off. Illustrates how to analyze control circuit diagrams in terms of loads and switches, one load at a time, using a ladder diagram. Note: this is a conversion of 35mm slides and sound track to videotape. 17:00

VT47 \$25.00



Electronic Air Cleaner Theory and Fundamentals

An introduction to air pollution, its classification and sources, plus methods of air cleaning, Electronic Air Cleaner design, components and efficiency. *33 pages*

70-9719

\$1.11



Electronic Air Cleaner Application and Installation

Includes selection, application and installation information for residential and light commercial type electronic air cleaners. *31 pages*

70-9723

\$1.10

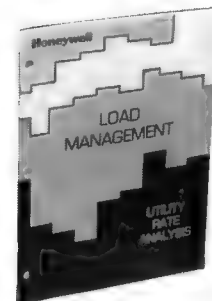


Electronic Air Cleaner Service Data

Includes replacement parts, model number identification, service tools and equipment, plus description, checkout and troubleshooting guide and parts list for Honeywell electronic air cleaners. *107 pages*

70-9724

\$4.35

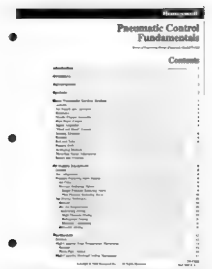


Load Management - Utility Rate Analysis

An extensive discussion of how electric utility rates are structured and explaining the basic components of the rate: consumption charge, fuel adjustment charge and demand charge. Calculations necessary to analyze savings on energy bills. *52 pages*

71-97433

\$4.50

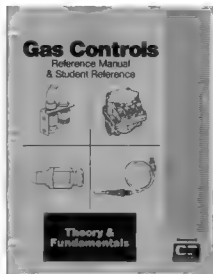


Pneumatic Control Fundamentals

A mini-reference on pneumatic control fundamentals covering: definitions, abbreviations, symbols, the basic pneumatic control system, air supply equipment, thermostats, controllers, sensor-controller systems, actuators and final control elements, relays and switches, and pneumatic control combinations. *36 pages*

77-1120

\$4.80

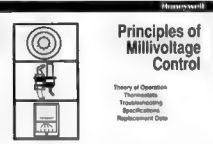


Gas Control Reference Manual & Student Reference – Theory and Fundamentals

Basic information and technical data on gas heating controls: gas properties, combustion, pilot burner systems, warm air heating systems, hydronic heating appliances, power sources, safety shutoff circuit and combination gas valves. Extensive glossary and technical charts. 48 pages, 1988

71-97473

\$5.50

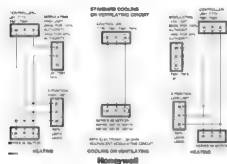


Principles of Millivoltage Control

Theory, controls and control circuits for millivoltage for heating systems with performance specifications on thermopiles. 22 pages, 1989

71-97280

\$2.75



Circuit Maker Card

Design your own Series 90 (electric modulating) control circuits with this training aid. The fold-over flaps show you how to add two-position limits, modulating limits or a changeover switch to a basic three-wire control circuit.

71-6605

\$0.26



Burners and Boilers

Descriptions of various types of commercial and industrial gas, oil, and coal burners and their operation. Also boilers classified by construction and size. A comprehensive and understandable introduction to the subject. 65 pages

70-8107

\$1.17

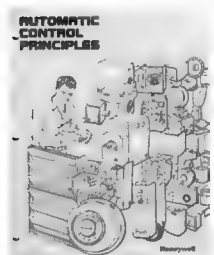


Heat Pump Controls

A general background in methods used to control heat pumps. It explains not only how a heat pump is controlled, but also why various strategies are important. A few of the subjects covered are: thermostats, auxiliary heat, changeover, emergency heat and defrost control. 48 pages

71-97735

\$4.75



Automatic Control Principles

This booklet on control principles explains the theory upon which modern control systems are based. The main emphasis is on HVAC controls. Some of the major topics covered: components of a control system, modes of control, types of control systems, disturbance sensing elements, controllers and final control elements. 45 pages

71-97152

\$4.50

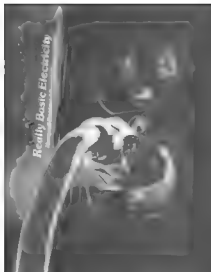


Basic Electricity

Introduces the student to basic electrical concepts. Only arithmetic and simple algebra are required for understanding. Topics include: direct current circuits, electromagnetism, alternating current circuits, measuring instruments, common wiring methods and others. *40 pages*

70-6714

\$4.00

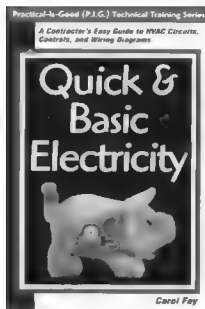


Really Basic Electricity

Written for the person with no background in electricity. Introduces basic concepts of a.c. and d.c. electricity. Includes pictures and diagrams. *96 pages*

71-97004

\$7.00

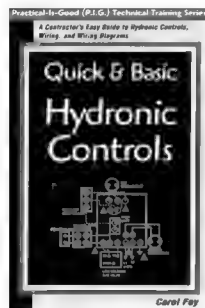


Quick and Basic Electricity

A contractor's beginning guide to HVAC circuits, controls and wiring diagrams. *80 pages*

71-97431

\$20.00

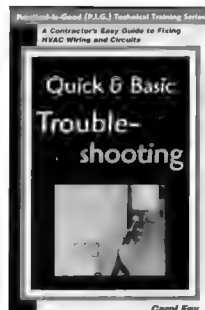


Quick and Basic Hydronic Controls

Another in the "Practical is Good" (P.I.G.) Technical Training Series. A contractor's easy guide to hydronic controls, wiring, and wiring diagrams. How figuring circuits is like watching a bug on a rope; why thinking in circles is good; how every hydronic control is a power supply, a switch, or a load; how limit controls are like a safety committee; how to see the friendly side of control panels. *87 pages, 2000*

71-97160

\$20.00



Quick and Basic Troubleshooting Book

This book tells you how to troubleshoot controls and control circuits using a meter, a "hopscotch," "Leapfrog," "daisy chain," and "homerun" methods, a trouble shooting chart, a wiring diagram and your common sense. *80 pages*

71-97931

\$20.00

Training Booklets

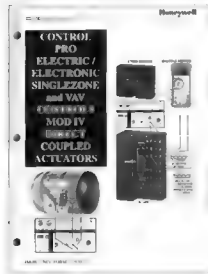


ControlPro Pneumatic Control Training Manual

This manual is for a two-day in-house course on Honeywell pneumatic controls. It is available separately for use in your own training. *150 pages*

71-97070

\$20.00



ControlPro Electric and Electronic Control Training Manual

This manual is for a two-day course on Honeywell commercial electric and electronic controls. Lab exercises are included. Use of this manual will require the purchase of various control devices in addition to the construction of some basic lab boards. Some of the controls included in this course are W7459 Enthalpy Controls, the ML7984 Valve Actuator, C7400 Sensors, the ML6161 VAV Box Actuator, the W973 Single Zone Control Panel, the M7415 Damper Actuator, economizers and valves.

71-97071

\$20.00

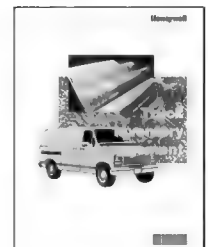


ControlPro Zoning Training Manual

This manual is for the ControlPro Zoning training clinics. This technical reference manual includes technical information on zoning systems, zoning dampers, filtration, humidification and ventilation as they relate to zoning systems. *386 pages*

71-97933

\$20.00



The Control Pro On Managing Truck Inventory

Looking for help with your truck inventory? Honeywell's Control Pro is a veteran of over 25 years in the HVAC industry, so when he talks, people listen! In this publication, The Control Pro takes a practical, down-to-earth look at managing truck inventory for the residential heating/air-conditioning contractor. Starting with developing a truck stock list and standardization of the truck stock list, he explains how proper truck inventory reduces the tech's lost time (i.e. chasing parts for that "best buy" is lost gross revenue.) He points out the advantages of stocking universal parts, turning your truck stock often and replacing truck stock. He discusses why taking truck inventory, pricing and cost control are important (their effect on "the bottom line"). This booklet includes valuable suggestions for a truck stock list.

67-6005

\$2.00

Programmed Instruction Books

A programmed instruction course presents information in small, carefully developed steps. At each step, learners are required to apply the new information by answering a question or solving a problem.

We've used these programmed texts successfully in several ways:

- **Independent instruction** -- for the individual who does not have access to an instructor.
- **Homework assignment** -- provides the required background information in preparation for more advanced classroom presentation
- **Remedial study** -- for use when a student needs additional study in basics to benefit from the classroom presentation

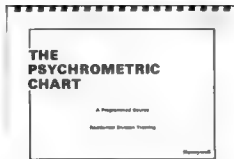


Fundamentals of Residential Control

A step-by-step, self-instruction workbook in a question and answer format. Students learn the necessary foundation for advanced study in controls while working at their own speed. Ideal for individual student use in preparation for other courses. Topics include: nature of electricity, rules governing electricity, inductive and capacitive circuits, principles of motor operation, power, transformer principles, relay principles, analyzing control circuits. *250 pages*

71-97083

\$11.00

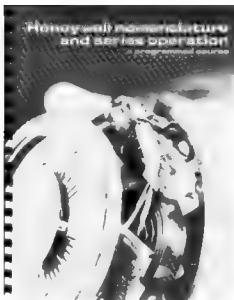


The Psychrometric Chart

A valuable tool for everyone in the HVAC industry. Knowledge of the complex relationship between the various characteristics of the air (temperature, humidity, moisture content, etc.) can be the key to solving a number of air conditioning problems. Text illustrates with examples of how to use psychrometric charts. Use it as a self-instruction text or a class exercise. *100 pages*

71-97444

\$6.50



Honeywell Nomenclature and Series Operation

Originally designed to be used in our own employee training program, this programmed instruction text contains general information on types of controls that make it useful for others too. Information on: Honeywell model numbering system, types of control switching, basic control circuits, types of control motors and their operation, modulating controls. *80 pages*

71-97159

\$4.50

Service Publications

Service Handbooks



Honeywell Service Data Manual

Formerly known as the **Service Handbook Library**, these manuals have been completely updated and published in a new 8-1/2 x 11 in. format to make even more service information available to technicians working on residential and light commercial heating and air conditioning equipment and controls.

71-97932

\$35.00

- **Gas Controls Service Manual**
All of the technical data and service information needed to safely and efficiently check and repair gas burner controls systems. Includes combination gas controls manufactured in the last 30 years for furnace, boiler and other heating appliance manufacturers, as well as service replacement controls.
- **Gas Electronic Ignition Controls Service Manual**
Principles of controlling gas heating equipment including intermittent pilot, direct spark ignition and hot surface ignition. Model numbers and specifications for obsolete as well as currently manufactured controls, with information on making replacements of special models made for equipment manufacturers with universal replacement models available for service work. Includes troubleshooting flowcharts for old and new controls.
- **Oil Controls Service Manual**
Control of oil burners is undergoing a major change as manufacturers are transitioning from electromechanical and electronic controls to microelectronic oil primary controls. This manual includes information on these controls as well as older devices that have been used for years.
- **Commercial Controls Service Manual**
Introduction and fundamentals of electric and electronic controls used on commercial packaged and other light commercial equipment. Includes: motors and actuators, linkages, dampers and valves, electromechanical controllers, electronic sensors, electromechanical economizers, electronic solid state economizers, reset systems and fan coil systems.

Air Conditioning and Electric Heat Controls Service Handbook

Components of the cooling control system: thermostat, contactor, pressure controllers, fan relays, fan centers and transformers. Glossary and troubleshooting guide. *87 pages*

70-4614

\$2.00



RA890, R4795 and R7795 Service Handbook

Wiring and checkout, normal operation summary, flame current check, flame simulator, final checkout, service notes and test equipment. *59 pages*

70-8610

\$1.42

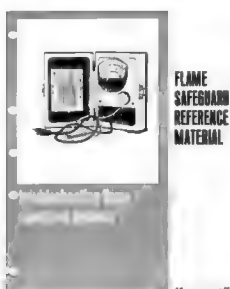


Troubleshooting Flame Safeguard Systems

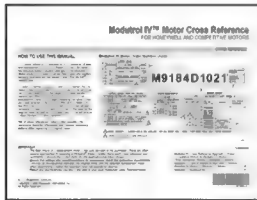
Generalized troubleshooting information for the controls used on large burners and boilers. Information on recurring shut-downs, random shutdowns, measuring flame signal. Ten commandments for the burner service person, checking system operation and periodic maintenance. *11 pages*

70-8626

\$0.58



Cross References



Modutrol IV Motor TRADELINE Cross Reference

Aid in selection of replacement Modutrol Motors. Contains application notes, cross reference competitive motors to Modutrol IV, Modutrol I, II, III to Modutrol IV, Modutrol IV to Modutrol IV and an accessory cross reference. Information contained has been updated for this edition. New listings of old motors have been added, based on calls from customers looking for data on previously unlisted motors. This reference now lists data on 1,298 Modutrol I, II, III, IV, and competitive motors. In addition, this volume covers 129 accessories. *85 pages*

63-8298

\$1.44

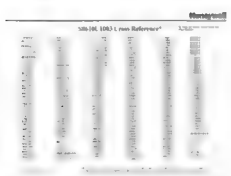


Heat Pump Thermostat Cross Reference

An exceptionally helpful teaching source and service aid on how to match Honeywell thermostats and subbases to the wide array of heat pump equipment available today. Contains heat pump thermostat specifications and hookup diagrams. *74 pages*

70-6627

\$5.25



S8610U1003 Cross Reference Guide

Cross reference the S8610U1003 to CAMSTAT, FENWAL, HONEYWELL, HSC, PENN-JOHNSON and ROBERTSHAW. *Laminated*

71-97204

\$1.25

Selection Guides



Valve Selection Guide

This guide, revised in 1997, includes a valve product overview, a summary of the valve selection process, invaluable selection criteria for commercial two-way and three-way valves, including ball valve application, selection of water, steam, unitary valves and actuators compatibility tables. Appendices contain valuable equations, charts and graphs. *55 pages, 1997*

63-8038

\$0.32

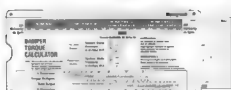


Motor/Actuator Selection Guide for Damper Applications

Revised, 1997. A comprehensive collection of all electric, electronic, pneumatic, foot mounted, direct coupled, valve and damper motors, actuators and their accessories. It also includes a wide variety of helpful tables and appendices for assisting in valve actuator and damper motor/actuator selection. *33 pages, 1997*

63-8419

\$0.95



Damper Torque Slide Rule/DCA Selector

A compact tool for estimating necessary torque based on damper type, velocity, static pressure and damper size. It is an excellent reminder to consider all of the necessary variables for proper actuator/motor selection. The back of the slide rule is an easy-to-use "DCA Selector" which includes all current spring and non-spring return damper DCA's, including the recently introduced 25 lb-in spring return models. This is a "must have" tool which you will find so valuable you cannot imagine being without it.

63-8437

\$1.69

Service Publications

Selection Guides



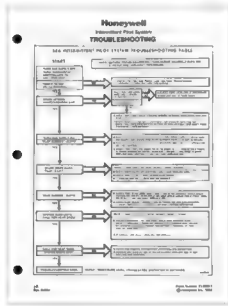
Thermostat Selection Guide

This handy poster-size guide provides a quick and easy reference for selecting single stage, multistage, and multistage heat pump thermostats. Included are electromechanical and electronic thermostats, both programmable and non-programmable. 20 in. x 26 in.
Updated 2002

50-8672

\$0.32

Troubleshooting Guides



This series of service aids makes troubleshooting a lot easier by displaying troubleshooting information in the form of a flow chart, with recommended checks to prove various system components good or bad.

Intermittent Pilot (S8600, S8610)

Covers S8600 B, C, H and M as well as S8610B, C, H and M. Includes checks for ignition cable, ignition system grounding, spark ignition circuit, and pilot and main burner light-off.

71-97209

\$1.25

Direct Spark Ignition (S87)

Covers all S87 models. Checks for typical problems including instructions for measuring flame current. *Laminated*

71-97024

\$1.25

Hot Surface Ignition (S89)

Shows all necessary checks and troubleshooting logic needed to run down problems in HIS type ignition systems. *Laminated*

71-97006

\$1.25

Universal Hot Surface Ignition Module (S8910U)

Covers all S8910U models. Helps you check for typical problems, using a troubleshooting flowchart and a series of troubleshooting steps and checks. *Laminated*

71-97210

\$1.25

These manuals and notebooks provide instructional support on the fundamentals of controls for residential and some light commercial heating and cooling applications.

- A **Reference Manual**, or mini-text, is a clearly written text with easy-to-follow diagrams that detail the fundamentals of controls and control systems. Designed for use by the student as well as the instructor and organized so that the instructor can vary the outline to fit specific teaching goals. Includes reproductions of the program's overhead slides.
- A **Student Notebook** reinforces instruction and offers a check on student understanding through the use of exercises and review questions.

Thermostats, Warm Air Limits and Hydronic Controls

Room comfort control, limit and circulator controls for residential heating systems. Functions of controls, operation and function of thermostats, warm air fan and limit controllers, hydronic controllers and troubleshooting.

Reference Manual	71-97085	\$5.00
Student Notebook	71-97087	\$3.00

Oil Heating Controls

Oil burner ignition and safety control systems for residential heating. Includes: fuel oil characteristics, oil burner primary controls, stack relay and cad cell flame detection systems, servicing oil burner control systems and general troubleshooting.

Reference Manual	71-97088	\$5.00
Student Notebook	71-97090	\$3.00

Gas Heating Controls

Gas control systems for residential heating. Information on function of the safety shutoff circuit, pilot burners and pilot flame conditions, residential gas valves, combination gas controls and troubleshooting.

Reference Manual	71-97091	\$5.00
Student Notebook	71-97093	\$3.00

Electric Heat Controls

The basics of residential electric heating control starting with a brief review of electrical principles and going through to service procedures. Information on influence of humidity, air circulation and radiant temperature on comfort; heating system performance in terms of response time, cycling rate, heat anticipation and timed sequencing; central and decentralized electric heating systems; servicing electric heat systems and troubleshooting.

Reference Manual	71-97306	\$5.00
Student Notebook	71-97308	\$3.00

Cooling Controls

Electric powered refrigeration equipment, theory of operation and control systems for residential central air conditioning. Information of mechanical refrigeration systems and equipment, typical residential systems, cooling system functions, thermostats, fan relays and fan centers, switching relays, contactors, pressure controllers and transformers.

Reference Manual	71-97094	\$5.00
Student Notebook	71-97096	\$3.00

Commercial Air Conditioning Controls

Electric controls used in light commercial building applications. Information on theory of automatic control; heating, cooling, ventilation and humidity controls; reset and economizer ventilation controls; zone controls, fan coil, multizone and makeup air systems and control valves.

Reference Manual	71-97324	\$5.00
Student Notebook	71-97325	\$3.00

Electronic Controls

The basic operation of analog electronic controls and the operation and application of electronic controls on multizone air conditioning systems. Information on basic control functions, electromechanical vs. electronic control systems, bridge circuit theory, and advantages and limitations of electronic controls.

Reference Manual	71-97367	\$5.00
Student Notebook	71-97366	\$3.00

Classroom Training

ControlPro Reference Material

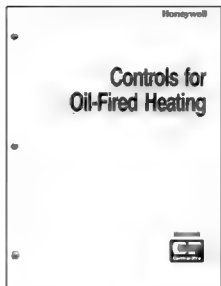
These publications are part of the ControlPro one-day class for heating and air conditioning technicians, and are good references for anyone needing information on Oil or Hydronic Heating Controls.



Oil Heating Controls Technical Reference

A compilation of all the specification data, installation and service publications on Honeywell's oil heating controls, such as cad cell oil primaries, stack relays and ignition transformers. *204 pages, 2001*

71-97479 \$18.00



Controls for Oil-Fired Heating

The "textbook" for the ControlPro Oil class. Includes: fuel oil and oil burning equipment, ignition requirements, oil burner control requirements, stack relays, cad cell primary controls, oil primary controls, oil control service and troubleshooting, glossary. *61 pages, 2000*

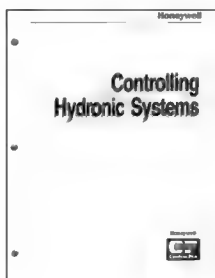
71-97406 \$5.50



Hydronic Heating Controls Technical Reference

A compilation of all the specification data, installation and service publications on Honeywell's hydronic heating controls, including Aquastat® controllers, Aquastat® relays, zone controls, outdoor temperature compensation controls, thermostats and hydronic heating controls accessories. *415 pages, 2001*

71-97480 \$24.00



Controlling Hydronic Systems

The "textbook" for the ControlPro Hydronic Heating Controls class. Includes: hydronic heating systems, hydronic system reset, why to use hydronic zoning, zone valve systems, zone circulator systems, case and cover relays, multizone hydronic panels, radiant heating, service and troubleshooting and glossary. *54 pages, 2000*

71-97402 \$5.50

These training presentation packages contain electronic Powerpoint slides on 3.5 inch diskettes to facilitate the creation of a classroom presentation on one of the subjects below. The graphic slides can be shown electronically with the aid of a multimedia projector, or printed out and converted to overhead transparencies. The presentations also include videotapes along with presentation notes and are supported by videotape programs. Requires a Windows or MAC computer.



Understanding Wiring Diagrams

This basic program places major emphasis on how ladder and schematic wiring diagrams represent a circuit and the symbols and conventions used. Shows how to interpret equipment operation by analyzing circuit diagrams. Shows how to use diagrams to sort out wiring mazes by isolating circuits and dealing with each individually. Shows how to understand advanced equipment. Applies these concepts to the wiring of controls such as the T874 Multistage Thermostat and its subbases. This complete training package includes:

- Three-ring binder with:
 - Reference Manual: *Really Basic Electricity* (71-97004), 96 pages)
 - Two diskettes for projecting full-color electronic slides
 - One diskette with free viewer software
 - Video index
 - Instructor's presentation notes
 - Paper copy of slides
 - Student handouts (paper masters for reproduction)
 - Lab exercises and answers
 - Final test
- Video Tape VH213, *Understanding Wiring Diagrams*, 56:00

71-97061

\$80.00



Using Meters for HVAC Service

This basic program covers the essential electrical measurements used in HVAC service work — voltage (low, line, and millivoltage), current and resistance. Covers the uses of the voltmeter, the ammeter, and the ohmmeter.


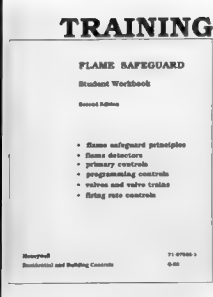
- Voltmeter measurements: Control circuit voltage (24 volts a.c.), line voltage, millivoltage (750 mV d.c.)
- Ammeter measurements: Motor current, thermostat heat anticipator current, flame current.
- Ohmmeter measurements: Circuit continuity, cad cell resistance, electronic sensors, switches
- Shows how to use voltage and resistance measurements to check switches. Hands-on lab emphasizes the use of meters to solve troubleshooting and service problems. The complete training package includes:
 - Three-ring binder with:
 - Two diskettes for projecting full-color electronic slides
 - One diskette with free viewer software
 - Video index
 - Instructor's presentation notes
 - Paper copy of slides
 - Student handouts (paper masters for reproduction)
 - Lab exercises and answers
 - Final test
 - Video tape VH214, *Using Meters*, 58:00

71-97062

\$80.00

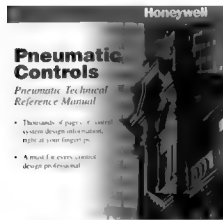
FSG Textbook

FSG Textbook, "Flame Safeguard Controls: A Honeywell Textbook" 2nd edition
The most comprehensive and popular Flame Safeguard textbook available in our industry. It's where the beginners begin and where the "Old Pros" return year after year and problem after problem.

	FSG Textbook, "Flame Safeguard Controls: A Honeywell Textbook", 362 pages	71-97558	\$22.50
	Contents: <ul style="list-style-type: none">• <i>Introduction to Flame Safeguard</i> – Flame Safeguard functions and controls.• <i>Combustion</i> – explanation of fuel types and flame characteristics.• <i>Burners and Boilers</i> – description of representative burners and boilers.• <i>Flame Rod Application</i> – design and installation of flame rods and rectification systems.• <i>Optical Detector Applications</i> – description, operation, application and checkout of detectors; covering rectifying photocells, infrared, and ultraviolet detectors.• <i>Primary Controls</i> – capabilities and operation of primary controls (RA890, R4795 and R7795) used on smaller burners• <i>Programming Controls</i> – capabilities and operation of programming controls (R4140 and BC7000 Microcomputer Programmable Controls).• <i>Troubleshooting FSG Systems</i> – outlines systematic procedures for isolating common Flame Safeguard problems.• <i>Service Equipment</i> – description and operation of testers, simulators and meters.• <i>Auxiliary Equipment</i> – description, operation, application and checkout of pressure and temperature controllers.• <i>Valves and Valve Trains</i> – description and application of typical Flame Safeguard valves and valve trains.• <i>Sizing and Application of Large Gas Valves</i> – principles and procedures for selecting gas valves (includes selection nomographs).• <i>Firing Rate Controls</i> – covers methods for controlling firing rate, firing rate sequences, programmer switching, motors and valves.• <i>Glossary</i> – Flame Safeguard terminology.		
	Student Notebook – Review questions to use with the FSG Textbook, 50 pages	71-97555	\$5.00

Reference Manuals

These reference manuals are collations of Honeywell publications used to apply, install and service various categories of control products. Combined they represent virtually all of the technical information Honeywell publishes on its residential and light commercial electric and electronic controls.



Pneumatic Controls Technical Reference Manual

Thousands of pages of control system design information, right at your fingertips. A must for every control design professional. *CD-ROM, 11/99*

56-E8125

\$7.00



THE SOURCE Reference Material for Gas Ignition

These are the publications used with *The Source* gas ignition technical training program.

• THE SOURCE Technical Reference

A compilation of all the specification data, installation and service publications on Honeywell's residential gas ignition controls such as gas valves, ignition modules and electronic fan timers. *634 pages, 2000*

71-97414

\$38.00

• THE SOURCE Information for Technicians

"White Papers" on subjects ranging from *What You Should Know About HVAC Standards*, to *Class II Transformer Sizing*. "Glossary" of terms used in the HVAC industry. Honeywell Tradeline Catalog pages on gas controls. *172 pages, 2000*

71-97416

\$11.00

• THE SOURCE Class Notes and Lab Exercises

Reproductions of the visuals used in *The Source* classroom training program along with the lab exercises that make up Honeywell's popular training program on gas ignition controls. *114 pages, 2000*

71-97162

\$6.00

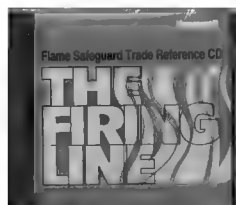


The Firing Line

A comprehensive manual designed to facilitate the upgrading and replacement of burner and boiler controls in commercial and industrial applications. Extensive information on approval bodies to explain what type of controls are required to meet various codes. Subjects include how to sell control modernization, how to sell replacement, conversion wiring, handy survey guides and worksheets.

70-8900

\$125.00



The Firing Line CD-ROM Version

The CD-ROM version of *The Firing Line* is a comprehensive reference media designed to facilitate the upgrade/replacement of burner and boiler controls in commercial and industrial applications. *1996*

66-1081

\$25.00



Flame Safeguard Reference Manual

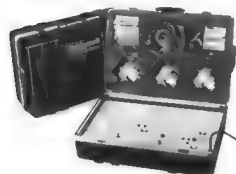
Specification sheet collation on: primary controls, programming controls, gas valves, flame sensors, FSG motors, ignition transformers, pressure controls/limits, reset controls, multiple boiler controls, low water cutoff, and feed water valve.

66-1004

\$135.00

	Flame Safeguard Catalog – Total Burner and Boiler Control <p>This catalog covers the complete line of Honeywell Burner and Boiler controls. In addition to our premier 7800 SERIES Burner Control Systems, BCS 7700 Boiler Control Systems and Communication Interface, the catalog covers flame amplifiers, firing rate motors, pressure/temperature sensors, amplifiers, auxiliary equipment, Flame Safeguard Modutrol IV motors, flame sensors, gas valves ignition transformers, modernization and replacement equipment, pressure controls/limits, primary and relay controls, programmers, test equipment, and commercial hydronic controls. Contains information on Flame Safeguard training materials, reference manuals and demonstrators and lab trainers.</p>	70-8911	\$1.39
	7800 Series Burner Control Manual <p>This manual contains promotional literature, features/functions/benefits, product selection submittal information, programmers, semi-automatic programmers, primaries, semiautomatic primaries, subbases, amplifiers, purge cards, optional components, expanded annunciator, communications, tester, accessories, conversion wiring diagrams, diagnostics, and troubleshooting, and cross references. In 3-ring poly binder.</p>	66-1065	\$36.00
	Engineering Manual of Automatic Control for Commercial Buildings - Soft cover <p>The 21st edition of this widely used and extremely valuable manual. Now includes direct digital control and operator workstations, as well as other current control technology and strategies. The 500+ pages guide the reader through the fundamentals of control system theory, direct digital control, building management systems and a dozen other disciplines essential to proper environmental control in buildings. In this edition, microprocessor controls are shown in most of the control applications, rather than pneumatic, electric or electronic controls, to reflect the trends in today's industry. Also included is new information on indoor air quality and district heating. Often referred to as the "Gray Manual," this technical resource has been a standard among engineering design professionals since it was first published in 1934. <i>Revised 1997</i></p>	77-1100	\$15.00
	Engineering Manual of Automatic Control for Commercial Buildings- CD-ROM <p>The CD-ROM version of the Engineering Manual of Automatic Control for Commercial Buildings is a reference media for easy access to the 500+ pages of fundamentals of control system theory, direct digital control, building management systems and a dozen other disciplines essential to proper environmental control in buildings. <i>Revised 1997</i></p>	77E-1100	\$15.00
	Zoning Systems Reference Manual <p>A comprehensive reference on the Honeywell residential zoning capability. Includes Consumer Literature, System Design, Zone and Bypass Dampers, Networked Zoning, TotalZone, EMM Series, MABS EZ, MM-2 and MM-3, Thermostats, Control Accessories and Fresh Air. <i>265 pages, 2004</i></p>	63-7067	\$30.00
	Zoning Product Information <p>All the critical and useful information on residential zoning in a convenient package. Recommended for use as a handout when doing training for technicians or others on the subject of residential zoning. <i>Approximately 120 pages, 2003</i></p>	50-8701	\$5.50

A lab trainer requires the student to actually perform point-to-point wiring to achieve a properly functioned control system.



DSP3168 Gas Ignition Trainer

The DSP3168 is a suitcase-style hands-on laboratory workstation designed to support instruction in gas ignition controls as used on residential gas heating equipment and some commercial cooking equipment. Using point-to-point wiring, students wire up actual controls to simulate the operation of a number of types of gas ignition systems, using a small propane-fired burner.

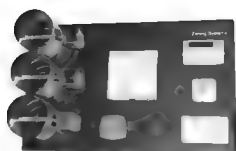
The DSP3168 can be set up to simulate the following types of gas ignition systems:

- Intermittent Pilot Ignition utilizing electronic flame detection to provide pilot safety.
- Direct Spark Ignition uses a spark electrode and a separate electronic flame detector electrode to directly light the main burner in a furnace, boiler or some other heating or cooking appliance.
- Hot Surface Ignition uses a hot surface igniter to directly light the main burner.
- SmartValve uses electronic flame sensing (flame rectification). This combines gas flow control and electronic intermittent pilot sequencing functions into a single unit. The low voltage igniter, and flame sensor on the pilot burner plug directly into the system control.

The DSP3168 lab trainer includes the following control and accessories: Honeywell VR8204, VR8205, and SV9501 gas valves; S8610U, S87D, and S8910U electronic ignition surface modules, and LP regulator and hose, ignition cable, wires with banana plugs, timing tab for S8910U, a propane tank holder, and an accessory box containing a spark adapter, direct spark igniter, intermittent pilot igniter-flame sensor allen wrench and screws. Propane not included. Using the banana plug wires, the student connects the controls and devices into the proper 120V and 24V circuits, both of which are fused.

Also included: a brief video on how to set up the trainer (VH162), a controls/devices list, lab exercises, a troubleshooting sheet, and reference material from THE SOURCE gas ignition training program.

DSP3168 \$1,250.00



DSP3540 Zoning Countertop Demonstrator

- Includes EMM-3; T8601, T8400 and T8001 Thermostats; ARD Dampers, C7735A Discharge Air Temperature Sensor and system indicator panel.
- Attractive display panel.

DSP3540 \$500.00



DSP3580 Networked Zoning Suitcase Demonstrator

- Includes T8635 Thermostat, W8635A, W8635B Equipment Interface Modules; and W8703 Damper Interface Module and W8735B Telephone Access Module.
- Convenient suitcase design.

DSP3580 \$1,000.00

DSP3452 Burner and Boiler Controls Demonstrator

The DSP3452 is designed to allow training and demonstration of all Honeywell Burner and Boiler Controls and auxiliary devices that are typically used with commercial and industrial burners. It demonstrates the operation of programmers and primaries, including 7800 SERIES controls, in gas applications. Permanently mounted controls include a spark generator (Q624), pilot burner, main burner, main valve, direct-coupled actuator and nine trouble switches. There is no auxiliary carrying case, which includes a supply of jumper wires with banana clips, boards with subbases mounted on them (Q270, Q795, Q520 and Q7800), brackets for flame detectors, and a propane bottle, regulator and hose.

The trainer can be used with primary controls (RA890, RM7890, R4795, R7795 or RM7895) or programming controls (R4140, RM7840, BC7000 or RM7800). These controls are not included with the trainer.

The nine trouble switches simulate a range of faults from a burned out pilot valve to a faulty flame detector to an inoperative firing rate motor. The *fault key* is printed in the instructor's manual only.

The trainer measures 20 in. by 30 in. by 10 in. It weighs approximately 30 lbs. (trainer and auxiliary case). Replaces DSP2002, DSP2010 and DSP2960. Includes an instructor's manual.

DSP3452 \$2,300.00

DSP3548 ControlLinks™ Configuration Kit

The Configuration Tool Kit was developed to assist with the commissioning of the ControlLinks™ Product line. It contains the Configuration Software, Software Manual, Converter modules and the required cables all in a handy carrying case with handle. ControlLinks™ products are restricted to Authorized ControlLinks™ Distributors.

DSP3548 \$448.37

DSP3564 ControlLinks™ Demonstrator

The DSP3564 is designed for use in training on the Honeywell ControlLinks™ Fuel Air Control System.

DSP3564 \$1,575.00

The demonstrator contains the following items:

- One RM7800L1012
- One ST7800A1021
- One R7999A1005
- Four ML7999A1003
- One 1-5K Pot
- Six SPST Toggle Switches
- One R7847A1033
- One Q7800A1005
- One Q7999A1006
- Six Indicator Lights
- One 2-1K Pot
- One Carrying Case with handle (22" x 16" x 6")

DSP2672 Demonstrator

Demonstrator for use with 7800 SERIES Burner Controls. Includes RM7800L, R7849A, ST7800A, S7830A and (2) Q7800A plus control panel. Emulates a typical burner through the means of switches, relays, flame signal simulator and lamp loads.

DSP2672 \$2,300.00

Provides semi-automatic means to demonstrate the functionality of the Honeywell 7800 SERIES Burner Controls.

ACCESSORIES:

- Q7700 Communications Interface Base Unit.
- QS7800 Communications Interface ControlBus™ Module.
- ZM7850 Combustion System Manager™ Software.

Burner and Boiler Controls Demonstrator Student Workbook

This Manual contains the Operating Training Board Exercises for the student for the DSP3472

71-97116 \$2.00

Burner and Boiler Controls Demonstrator Instructors Manual

This Manual is the Instructor's version of the Operating Training Board Exercises for the DSP3472

71-97117 \$10.00

DSP3726 Oil/Hydraulics Hands-On Suitcase Trainer

Used to train oil/hydraulics service technicians in the operation, troubleshooting, service and repair of most oil and hydronic control systems currently found in oil furnace or boiler applications.

DSP3726 \$1,500.00

Seven suggested lab exercises provide wiring diagrams for the students to follow. Students use wires with banana plug connectors to wire controls for the exercises. Line and low voltage connections are provided for control power. Students follow a checklist of events to verify control and system operation. For troubleshooting practice, the instructor can insert troubles into the system using four fault switches.

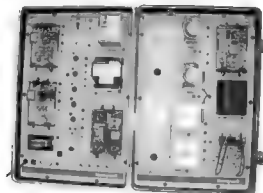
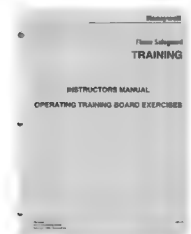
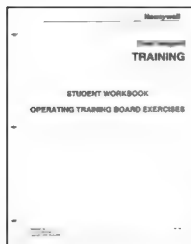
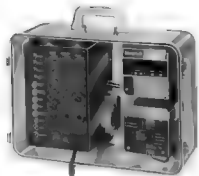
The Suitcase Trainer measures 18 in. (457 mm) by 30 in. (762 mm) by 12 in. (305 mm) closed, and opens to 36 in. (914 mm) by 30 in. (762 mm) by six in. (152 mm). Controls are permanently mounted in the two halves of the Trainer.

Controls included:

- R8184G ProtectoRelay® Intermittent Oil Primary
- R7184U Electronic Oil Primary
- QS7100F Flame Quality Indicator
- V8043 Motorized Zone Valves (2)
- Electronic Thermostats (2)
- Fan Timer Module
- L8184 Aquastat® Control
- L7148A Electronic Dual Aquastat® Control
- L7124U Electronic Aquastat® Control
- AQ475 Outdoor Temperature Compensation Control

Also included:

- Wires with banana plug connectors for student exercises.
- Digital multimeter for verification, testing and troubleshooting.



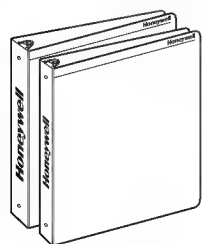
Training and Meeting Aids



Certificates

Honeywell diploma-style *Certificate of Attendance* can be used for training classes or seminars that you conduct. Compatible with laser printers. These certificates are an excellent way to provide your students with a record of their attendance at Honeywell-sponsored classes.

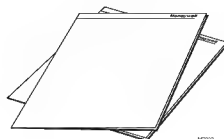
Generic Certificate	63-7027	\$1.25
Burner and Boiler Controls Certificate	63-7028	\$1.25



Binders

Honeywell red vinyl, 3-ring binders. A great way for you or your students to keep Honeywell information organized and at your finger tips. Binders are available in 2 sizes with "HONEYWELL" imprinted on the spine and front cover.

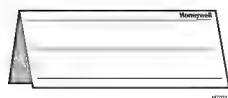
3-ring binder, 1 inch, Honeywell, red vinyl	71-97046	\$4.00
3-ring binder, 1-1/2 inch, Honeywell, red vinyl	71-97047	\$5.00



Presentation Folder

Use the Honeywell red, 2-pocket presentation folder to add that professional finishing touch to your customer presentation or student handout.

59-6344	\$1.75
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Meeting Table Tent Card

Keep Honeywell and your students name visible, and at the same time provide them with helpful tips on getting the most out of your meeting or class. Our table tent card has 10 preprinted messages about successful participation during a meeting or class.

71-97583	\$1.00
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Banners, Decals and Accessories

Banners, Decals and Accessories



Honeywell Banner

17 in. by 60 in. Red with white Honeywell lettering

71-97936

\$9.50

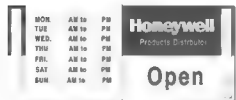


Window sign

Honeywell Window Cling sign. Double sided 8 in. by 4 in., Red "Honeywell Products Distributor" lettering

71-97942

\$2.75



Open/Closed sign

Honeywell sliding Open/Closed sign with hours of operation slide. 8 in. by 4 in.

71-97941

\$6.75



Floor Mat

Honeywell Carpeted Floor Mat. 36 in. by 48 in. Black with Red Honeywell lettering

71-97940

\$57.50



Counter mat

Honeywell counter mat 14 in. by 19 in. Red with red background. 11 in. by 11 in. clear-scuff resistant insert area

71-97939

\$18.50

Counter Mat Inserts

Thermostat Selection Guide Counter Mat Insert. Same as 50-8672.

50-8922

\$1.00

Universal Controls Counter Mat Insert

50-8013

\$1.00

ASD Program Dual Counter Mat Insert

63-9237

\$1.00

Valves & Actuators Counter Mat Insert

63-9279

\$1.00

Enviraicare Elite Humidifier Counter Mat Insert

50-8975

\$1.00

Perfect Climate Humidifier Counter Mat Insert

50-8976

\$1.00

Replacement Filters Counter Mat Insert

50-8974

\$1.00

T8775 - The Digital Round thermostat Counter Mat Insert

50-8973

\$1.00

Counter Stool

Honeywell counter stool 14 in. diameter Red with white Honeywell lettering

71-97937

\$75.00



Truck Decal

Your company's or your customer's vehicles are traveling billboards. Advertise that you carry the very best controls with these attractive truck decals. Rectangular, 11 in. by 14 in.

71-97002

\$3.50

Gondola Header Card with Mounting Hardware

48" x 8" Honeywell logo card (styrene). Mounting hardware included

71-97946

\$5.00



Adhesive Floor Graphic

12" x 36" non-skid laminate floor graphic. White with red border and Honeywell logo.

71-97948

\$7.50



Banners, Decals and Accessories

Banners, Decals and Accessories



Counter/Shelf Pamphlet Card Holder

Clear acrylic brochure holder. Two color Honeywell logo across bottom.

71-97947

\$7.50



Dry Erase Calendar

4-week dry erase calendar. 34" x 24", 2 color Honeywell logo across top

71-97949

\$5.00



Pocket Sleeve Shelf Dangler

2 color dangler with Honeywell logo across top. Features a pocket for custom messages

71-97950

\$4.00



Shelf Dangler

Vinyl shelf dangler with Honeywell logo

71-97951

\$2.00



Wall Clock

Red wall clock with white Honeywell logo

71-97953

\$15.00



UPC Shelf Strips

Honeywell logo strips for display shelving. Features positions for pricing. Sold in 100 foot rolls, perforated every 6 inches.

71-97952

\$15.00



Wall Plaque Literature Display

Clear acrylic wall rack with 12 pockets for product literature. Printed with a silk-screened 6" Honeywell header

71-97954

\$200.00

Ordering Information

Order online

You can order online at <http://customer.honeywell.com>

If you are already a Honeywell customer, login with your name and password and click on the Product Catalog link to find the materials you are looking for.

For a new customer follow these steps.

1. Go to <http://customer.honeywell.com>
2. Click on the REGISTER icon in the top right hand corner.
3. This will take you to a page where you will see the following link:
[Training Material Customer- User Registration](#)
4. Click on this link.

The window will change to a page where you will be asked to submit some information about yourselves. Click on the **SUBMIT** button after you are done inputting your information.

You will be e-mailed your password.

Use your e-mail address as the username and the password that was e-mailed as the password for logging-in.

Payment must be made by VISA, MasterCard or American Express card.

Shipping

All U.S. orders for training materials are shipped freight collect, UPS ground. Please pay with a credit card and the charges will be added to your total.

Expedited Orders

When requested, we will expedite an order and ship by air, but you must pay by credit card and you will be billed for the shipping costs.

International Orders

International orders *MUST* be placed through your local Honeywell subsidiary. They can advise you on ordering and shipping procedures. We cannot accept or ship international orders.

Returns

Returned items are accepted within four months of purchase. There are no cash refunds, and a \$30 restocking fee *per item* will be deducted from your credit. You are responsible for return shipping costs. The address for returns is printed on the bill of lading. Please call or fax in advance of your return and provide a list of the items that you are returning and a reason as to why you are returning them.

Form of Payment

Check or Money Order (Mailed orders only)

Enclose a check or money order with your order. Make check payable to Honeywell International Inc.

Credit Card

Charge your Training Materials Order to your VISA or MasterCard. Include card number, cardholder's name and expiration date on the Training Materials Order Form when you mail or fax in your order, or enter your credit card information on-line.

Inquiries

If it is necessary to contact us regarding your order, please specify the date the order was sent. Contact us at:

Honeywell International Inc.
MN10-1461
1985 Douglas Drive North
Golden Valley, MN 55422
FAX: 800-356-0149
PHONE: 763-954-5720

Note: Please allow 1 to 2 weeks to process and fill your order.

Honeywell

AUTOMATION AND CONTROL PRODUCTS

WARRANTY POLICY

Honeywell warrants the products in this catalog (except those parts designated on Honeywell's price lists as not covered by this warranty) to be free from defects due to workmanship or materials, under normal use and service, for the following warranty periods. Honeywell Zoning products: twenty-four (24) months from date of installation. All Enviracaire Elite products excluding replacement maintenance parts: sixty (60) months from date of installation. F50 and F52 Air Cleaners and related parts: sixty (60) months from date of installation. F100 and F27 Air Cleaners: twenty-four (24) months from date of installation. Variable frequency drive devices and accessories: twenty-four (24) months on parts from date of installation when start-up and commissioning is performed by Honeywell VFD Authorized personnel. The warranty period for all other products is twelve (12) months from date of installation.

If a product is defective due to workmanship or materials, is removed within the applicable warranty period, and is returned to Honeywell in accordance with the procedure described below, Honeywell will, at its option, either repair, replace or credit the customer for the purchase price of the product, in accordance with the procedure described below. This warranty extends only to persons or organizations who purchase products in this catalog for resale.

The express warranty above constitutes the entire warranty of Honeywell with respect to the products in this catalog and IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL HONEYWELL BE RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

INSTRUCTIONS—INSTALLING OR SERVICING CONTRACTOR OR DEALER

When replacing a Honeywell product under warranty, including those products furnished on original heating and/or cooling equipment, you should rely on your local Honeywell Wholesaler or Distributor for prompt and efficient product replacement service.

A Honeywell Returned Goods Identification Tag (form 87-0030) or an electronic data notification system must be completed and approved by the servicing dealer/contractor prior to submitting the product to the Honeywell Wholesaler or Distributor. (Tags may be obtained from the Wholesaler or Distributor in advance.) No warranty claim for product replacement or credit will be honored by the Wholesaler/Distributor without a completed warranty tag attached or electronic notification.

INSTRUCTIONS—WHOLESALE OR DISTRIBUTOR

The following will apply to the return of any product to Honeywell under this warranty:

Any products which are:

- (i) identified with Honeywell's Returned Goods Identification Tag (form 87-0030), or electronic notification system;
- (ii) are listed individually with Returned Goods ID Tag numbers and date codes listed on Honeywell's Returned Goods Order (form 71-96024) or a similar form;

- (iii) packed separately from other returns and protected from shipping damage;
- (iv) have certification by the installer or servicing dealer that the product was removed, due to failure, within the applicable warranty period;
- (v) are received transportation pre-paid at:
Honeywell Return Goods
Dock 4 MN10-3860
1885 Douglas Drive
Golden Valley, MN 55422
- (vi) and are found by Honeywell's inspection to be defective in workmanship or materials under normal use and service

will be handled in accordance with one of the two following procedures, as specified by the customer making the return:

1. **CREDIT PROCEDURE.** Honeywell will issue credit, at Honeywell's lowest wholesaler net price in effect at the time of the return (as set forth on Honeywell's then current price sheet) or at the actual invoice amount if a copy of that invoice is attached to the packing list. (TRADELINE Replacement Exchange Products will be at Honeywell's lowest replacement exchange net price in effect at the time of such return, as shown on Honeywell's then current price sheet.) Honeywell reserves the right to disallow this credit option in cases of warranty abuse.

2. **REPAIR OR REPLACEMENT PROCEDURE.** Honeywell will, at its option, either repair or replace the product free of charge and return it or its replacement lowest cost transportation prepaid. The replacement will be a functionally equivalent new TRADELINE product. Premium transportation will be used at customer's request and expense.

The warranty will not be honored if:

- (i) product is damaged or missing parts or accessory items including batteries.
- (ii) product exhibits evidence of field misapplications.

Final disposition of any warranty claim will be determined solely by Honeywell. If inspection by Honeywell does not disclose any defect covered by the warranty, the product will be returned or scrapped as instructed by the customer and Honeywell's regular service charges will apply. Products returned to the customer may be sent shipping charges collect.

If you have any questions relative to product returns to Honeywell, contact your Customer Care Representative:

Honeywell
MN10-1461
1885 Douglas Drive
Golden Valley, MN 55422

SPECIAL MESSAGE TO INDUSTRIAL USERS AND BUILDING OWNERS

Thank you for using Honeywell products.

As a user, when you purchase a Honeywell product from this catalog you should expect performance from the product and, if it fails, replacement of the product by the installing dealer.

Typically, you will have purchased a Honeywell product under the following circumstances:

1. To modernize or refurbish your existing commercial and/or process control system.
2. You have purchased new commercial and/or process heating, cooling, air cleaning or humidification equipment

that is furnished with Honeywell controls or components (refer to your owner's manual furnished with the equipment).

3. A control has failed on your existing commercial and/or process heating and/or cooling equipment and is replaced by a Honeywell TRADELINE product.

With few exceptions, you utilize the services of a competent plumbing, heating and/or cooling dealer/contractor for new or replacement work performed.

Although our warranty does not extend to you, Honeywell does extend a warranty to your supplier.

Your supplier can rely on its local Honeywell Wholesaler/Distributor or Honeywell for prompt replacement.

If you have any questions, need additional information or would like to comment on Honeywell's products or services, please write or phone:

Honeywell
Customer Care MN10-1461
1885 Douglas Drive North
Golden Valley, MN 55422-4386
(612) 951-1000

or check your telephone directory (white pages) for one of many Honeywell field sales offices.



Honeywell

Proud Partner



*From your Honeywell
Wholesaler/Distributor*



Honeywell

Automation and Control Solution
Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422



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The American Lung Association and its Health House program do not endorse products.



Printed in U.S.A. on recycled
paper containing at least 10%
post-consumer paper fibers.